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Michigan Disaster Debris Management Plan

(A support plan to the Michigan Emergency Management Plan)

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STATE OF MICHIGAN
DISASTER DEBRIS MANAGEMENT PLAN

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STATE OF MICHIGAN
DISASTER DEBRIS MANAGEMENT PLAN
EXECUTIVE SYNOPSIS

PURPOSE: Provide an organizational and operational framework for the State of Michigan to assist affected local jurisdictions in managing a debris operation subsequent to a debris generating disaster. The efficient and rapid management of disaster debris will help to protect the health and safety of the affected population, minimize threats to the environment, and ensure that critical response and recovery activities can proceed in a timely and unencumbered manner.

SCOPE: Activities related to the rapid, efficient, cost-effective, and environmentally compliant clearance, separation, removal, storage, reduction, and disposal of disaster debris.

INITIATING CONDITIONS: A large-scale and/or catastrophic, debris generating disaster. Typically, such incidents will be declared a major disaster under the federal Stafford Act (PL 93-288, as amended) and will result in the activation of the federal Public Assistance Grant Program (PAGP) to provide funding assistance for debris management activities. The areas affected by the incident will likely be included in a "State of Disaster" or "State of Emergency" declaration by the Governor under the Michigan Emergency Management Act (1976 PA 390, as amended).

IMPLEMENTION: The Michigan State Police, Emergency Management and Homeland Security Division (MSP/EMHSD) is responsible for plan implementation.

INVOLVED ENTITIES: The following state agencies and nongovernmental organizations have potential roles and responsibilities identified in the Michigan Disaster Debris Management Plan:

- MSP/EMHSD;
- Michigan Department of Agriculture (MDA);
- Michigan Department of Community Health (MDCH);
- Michigan Department of Corrections (MDOC);
- Michigan Department of Environmental Quality (MDEQ);
- Michigan Department of Human Services (MDHS);
- Michigan Department of Management and Budget (MDMB);
- Michigan Department of Military and Veterans Affairs (MDMVA);
- Michigan Department of Natural Resources (MDNR);
- Michigan Department of Transportation (MDOT);
- Michigan Voluntary Organizations Active in Disaster (MIVOAD); and
- Michigan Citizen Corps (MCC).

INVOLVED FACILITIES: Depending on incident circumstances, the following facilities may be activated / established in a disaster debris management operation:

- State Emergency Operations Center (SEOC);
- Emergency Operations Centers (EOCs) of affected local jurisdictions;
- State Disaster Debris Management Center – part of SEOC structure;
- Local Disaster Debris Management Centers – part of affected local EOC structures;
- Joint Field Office (JFO) – federally-selected / managed facility with state representation;
- Federal Disaster Debris Management Center – part of JFO structure;
- Collection Centers – locally-selected / managed facilities;
- Staging Areas – local and state selected / managed facilities;
- Base / Camps – local and state selected / managed facilities;
- Temporary Debris Storage and Reduction Sites (a.k.a. Debris Management Sites) – locally-selected / managed facilities;
- Landfills and Resource Recovery Facilities – locally-identified / selected facilities; and
- Satellite Disaster Debris Management Offices – state selected / managed facilities.

MISSION: Upon request of affected local jurisdictions, the MSP/EMHSD and the aforementioned state agencies and nongovernmental organizations will provide direct management and/or technical assistance to local disaster debris management operations. This assistance may include, but is not limited to, any or all of the following activities:

- Contact and coordinate with FEMA and other federal agencies / officials.
- Activate the State Disaster Debris Management Team / Center as part of the State Emergency Operations Center (SEOC) structure.
- Assist in determining debris clearance and removal priorities.

- Assist in establishing required facilities and providing supplemental personnel, vehicles, equipment, and technical engineering expertise to support operations as required.
- Assist in establishing work schedules, a communications plan, and a health and safety plan for involved work crews.
- Ensure compliance with environmental and public health laws and regulations.
- Coordinate crop, forest, livestock and wildlife debris disposal / management operations as required.
- Assist in determining applicant, work, and cost eligibility for debris clearance and removal work under the PAGP.
- Assist in developing and implementing contracts with involved agencies and contractors in a manner consistent with federal, state, and local guidelines and requirements.
- Assist in managing the flow of paperwork involved in the debris management operation.
- Assist in reviewing and approving cost documentation for debris management related work.
- Assist in supervising, coordinating, and monitoring work activities.
- Address issues that may arise related to possible hazardous / contaminated debris in the event of an incident that involves potential biological or WMD contamination.
- Ensure that all involved parties complete the required work on time and in accordance with local, state and federal regulations.
- Assist in closing out operations once work is completed.

EXECUTION: As incident circumstances dictate and/or upon request of affected local jurisdictions, the MSP/EMHSD will execute the Michigan Disaster Debris Management Plan. As appropriate, the State Disaster Debris Management Team and Center will be activated as part of the SEOC structure. The MSP/EMHSD will provide direct management assistance and the various involved state agencies and nongovernmental organizations will be tasked to provide technical and/or materiel assistance to local debris operations as required. The MSP/EMHSD will contact and coordinate with FEMA and other involved federal agencies as appropriate for the situation. As required by incident circumstances, the MSP/EMHSD will prepare the request for and coordinate activities with FEMA related to a Major Disaster declaration under the federal Stafford Act. If such a declaration is granted, the MSP/EMHSD will work directly with FEMA in the establishment, management and administration of the federal PAGP to fund a portion of the debris management operation. The MSP/EMHSD will implement the PAGP in accordance with the State of Michigan Administrative Plan for the PAGP – a separate yet related support plan to the Michigan Disaster Debris Management Plan. State agencies such as the MDA, MDEQ, MDMVA, and MDOT will provide engineering and other technical assistance in support of PAGP activities. The MDEQ and MDCH will coordinate environmental and public health compliance issues, respectively. The MSP/EMHSD will close out debris management operations with the affected local jurisdictions, and the PAGP with FEMA, once all debris and PAGP grant management activities have been completed.

TIME FRAME: This plan will be implemented during the response phase of the incident (as soon as the need is identified). Many of the activities will continue well into the long-term recovery phase (several weeks to several months or years after incident occurrence).

LOCAL COORDINATION: It is expected that all involved local jurisdictions will have developed a counterpart local disaster debris management plan based on the guidance provided in MSP/EMHSD Publication 109a – "Local Disaster Debris Management Planning Handbook." The organizational and operational structures, systems, and processes described in the local plans should be consistent with those described in the Michigan Disaster Debris Management Plan. This coordinated planning effort is critically important to the ultimate success of the joint local-state disaster debris management operation.

COMMAND AND CONTROL: The MSP/EMHSD is the primary coordinating agency for SEOC operations and state-level disaster debris management operations, as prescribed in the Michigan Emergency Management Plan (MEMP) and the Michigan Disaster Debris Management Plan. State support agencies and nongovernmental organizations will receive debris management task assignments (in accordance with the Michigan Disaster Debris Management Plan) from the MSP/EMHSD, as incident circumstances dictate. Involved nongovernmental organizations maintain management control over their personnel and resources through their own internal management structures. Affected local jurisdictions maintain control over their local disaster debris management operations through their local EOC and established debris management facilities. The State of Michigan Administrative Plan for the PAGP will govern the implementation, management, and administration of the PAGP by the MSP/EMHSD. Supplemental federal guidance documents provided by FEMA and/or the requirements set forth by other federal agencies will be adhered to as appropriate for the PAGP.

CLOSEOUT: The MSP/EMHSD will close out the debris management operation and the PAGP once all activities related to each have been completed. This process could take from several months to several years to complete, depending on incident circumstances and the volume of work performed in the operation. The MSP/EMHSD will coordinate any post-incident / declaration audit activities with federal and state auditors, as required.

STATE OF MICHIGAN
DISASTER DEBRIS MANAGEMENT PLAN

PLAN PURPOSE AND SCOPE:

Natural and man-made disasters generate a variety of debris that includes, but is not limited to, such things as trees and brush, sand, gravel, building/construction materials, vehicles, personal property, industrial materials, etc. The quantity and type of debris generated from any particular disaster is a function of the location and kind of event experienced, as well as its magnitude, duration, and intensity. The quantity and type of debris generated, its location, and the size of the area over which it is dispersed directly impacts the type of collection and disposal methods used to address the debris problem, associated costs incurred, and the speed with which the problem can be addressed.

In a large-scale / catastrophic disaster, local jurisdictions may have difficulty in locating staff, equipment, and funds to devote to disaster debris removal, both in the short- as well as long-term. Out of necessity, private contractors and state departments / agencies may play a significant support role in the debris removal, collection, reduction, and disposal process.

This plan provides an organizational and operational framework for the State of Michigan to assist affected local jurisdictions in managing the clearance, separation, removal, storage, reduction, and disposal of disaster debris subsequent to a large-scale / catastrophic debris generating disaster within this state. It is based on the basic waste management approach of reduction, reuse, and reclamation. The State of Michigan is obligated – under the basic principles of comprehensive emergency management – to provide for the organized and time-effective delivery of needed goods and services to afflicted areas to support and/or facilitate necessary incident response and recovery operations. The efficient and rapid management of disaster debris will help to protect the health and safety of the affected population, minimize threats to the environment, and ensure that critical response and recovery activities can proceed in a timely and unencumbered manner.

Michigan typically does not have the large-scale / catastrophic types of disasters (e.g., hurricanes, earthquakes, etc.) that generate tremendous quantities of disaster debris. However, Michigan does occasionally experience disasters of sufficient scope, magnitude and severity (e.g., tornadoes, floods, ice storms, etc.) to generate large quantities of debris. This debris can severely impact the affected areas to such a degree that the health and safety of the population is put in jeopardy, the environment is damaged, and the ability to provide essential services and to maintain essential systems for the incident response and recovery is compromised. In addition to these natural disasters, Michigan is certainly at risk from a wide array of terrorist threats – several of which could potentially result in a large-scale / catastrophic debris generating incident under the right circumstances.

This plan defines and assigns the policies, procedures, responsibilities and methods for the implementation of the disaster debris management function in the State of Michigan subsequent to a large-scale / catastrophic disaster. The plan provides a framework for organizing the rapid, safe, cost-effective, and environmentally compliant clearance, separation, removal, storage, reduction, and disposal of disaster debris. It also provides for the minimization of debris-related threats to public health and safety, the environment, and the provision of essential services and systems. In addition, the plan:

- Sets forth the administrative organization and responsibilities of state officials and agencies for disaster debris management operations;
- Establishes coordination and liaison procedures with the Department of Homeland Security / Federal Emergency Management Agency (DHS/FEMA) – hereafter called FEMA, other federal agencies and states, applicable nongovernmental organizations, business and industry, affected local governments, and the media;
- Establishes methods and procedures for articulating state-determined needs, desires, and requirements for disaster debris removal;
- Establishes administrative procedures for clearing, separating, removing, transporting, storing, and disposing of disaster debris;
- Establishes methods and procedures for educating the public on how they can best participate in the debris clearance, separation, and removal operation;

- Provides for the establishment of a State Disaster Debris Management Team and State Disaster Debris Management Center within the State Emergency Operations Center (SEOC) or other appropriate emergency coordination center;
- Provides for the development and annual update of a disaster debris management state support plan as dictated by the needs of comprehensive emergency management; and
- Provides a state disaster debris management plan in support of, and to provide guidance to, counterpart local disaster debris management efforts.

Implementation of this plan will be coordinated by the Michigan State Police / Emergency Management and Homeland Security Division (MSP/EMHSD), utilizing state resources organized by Emergency Support Function (ESF) as prescribed in the Michigan Emergency Management Plan (MEMP).

AUTHORITIES, REFERENCES AND DEFINITIONS:

Federal Authorities.

- Public Law 93-288, as amended, the Robert T. Stafford Disaster Relief and Emergency Assistance Act
- Public Law 109-295, the Department of Homeland Security Appropriations Act, 2007 (established Public Assistance Pilot Program)
- National Response Framework (NRF), ESF #3 (Public Works and Engineering Annex) and Catastrophic Incident Annex
- FEMA Handbook: Debris Management Course Student Manual (G202)
- FEMA Handbook: Public Assistance Applicant Handbook (323)
- FEMA Handbook: Debris Management Guide (325)
- FEMA Handbook: Public Assistance Pilot Program – Program Guidance (June 2007)
- FEMA Disaster Assistance Strategy 2007-2 (Debris Removal Operations)
- 44 CFR: Emergency Management and Assistance (Parts 13 and 206 in particular)
- FEMA Fact Sheets and Policies related to debris removal / disposal and/or the Public Assistance Grant Program (PAGP) from the "9500 Series Policy Publications." Those that are most relevant to debris removal / disposal operations include:
    - 9523.4 – Demolition of Private and Public Facilities
    - 9523.11 – Hazardous Stump Extraction and Removal Eligibility
    - 9523.12 – Debris Operations: Hand-Loaded Trucks and Trailers
    - 9523.13 – Debris Removal from Private Property
    - 9523.14 – Debris Removal from Private Property to Address Immediate Threats
    - 9580.1 – Debris Operations Job Aid
    - 9580.4 – Fact Sheet: Debris Operations – Clarification
    - 9580.201 – Fact Sheet: Debris Removal – Applicant's Contracting Checklist
    - 9580.202 – Fact Sheet: Debris Removal – Authorities of Federal Agencies
    - 9580.203 – Fact Sheet: Debris Monitoring

  (Note: Current versions of these documents can be viewed / downloaded from the FEMA web site at the following address: **http://www.fema.gov/government/grant/pa/9500toc.shtm**)

State Authorities.

- Act 390, Public Acts of 1976, as amended, the Emergency Management Act
- Michigan Emergency Management Plan
- Michigan Administrative Plan for the Public Assistance Grant Program
- Act 451, Public Acts of 1994, as amended, the Natural Resources and Environmental Protection Act
- Act 239, Public Acts of 1982, as amended, the Bodies of Dead Animals Act
- Executive Directive 2005-9 (September 29, 2005), "Adoption of the National Incident Management System (NIMS) for Emergency Incident Management in Michigan"

Other References.

- Various disaster debris management plans were used as references (e.g., Louisiana, California, North Carolina, Delaware)
- Materials from previous MSP/EMHSD "Tree Central" debris management operations (from Federal Disasters 1181 and 1226) were reviewed and used as references

Definitions.

BURNING: The reduction of woody debris by controlled burning. Woody debris can be reduced in volume by approximately 95 percent through burning. (Air curtain burners are recommended for burning because they can be operated in a manner to comply with clear air standards.)

CATASTROPHIC INCIDENT (EVENT): Any natural or manmade incident, including terrorism, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, and/or government functions. A catastrophic incident could result in sustained national impacts over a prolonged period of time; almost immediately exceeds resources normally available to state, local, tribal and private sector authorities in the impacted area; and significantly interrupts governmental operations and emergency services to such an extent that national security could be threatened. All catastrophic incidents are Incidents of National Significance.

CHIPPING OR MULCHING: Reducing wood related material by mechanical means into small pieces to be used as mulch or fuel. Woody debris can be reduced in volume by approximately 75 percent, based on data obtained during reduction operations. The terms “chipping” and “mulching” are often used interchangeably.

COLLECTION CENTER: Designated locations at which affected residents can dispose of their disaster-related debris. Collection Centers may be used when curbside debris collection is not practical (e.g., rural / sparsely populated areas or logistically difficult areas such as neighborhoods with steep hills). Residents transport their debris to the Collection Center and then place it in separate bins or piles for each particular type of debris.

COMPREHENSIVE EMERGENCY MANAGEMENT (CEM): An integrated approach to the management of programs and activities that encompasses all phases (prevention, mitigation, protection, preparedness, response, and recovery) of incident management, all types of emergencies and disasters (natural, technological, human-related, and WMD attack), all levels of government (local, state, and federal), nongovernmental organizations, and the private sector. (Note: CEM was a commonly used term prior to development of the National Response Framework. Now, the term “domestic incident management” is preferred. However, CEM is still widely used in the emergency management field and the two terms mean essentially the same thing.)

COUNTY OR LOCAL EMERGENCY MANAGEMENT COORDINATOR (EMC): A person appointed pursuant to Act 390, PA 1976, as amended, to coordinate emergency management activities for a county or municipal emergency management program. Also commonly called County or Local “Emergency Manager.”

DAMAGE ASSESSMENT: The systematic process of determining and appraising the nature and extent of the loss, suffering, or harm to a community resulting from an emergency/disaster.

DEBRIS: Scattered items and material broken, destroyed, or displaced by a natural or human-caused disaster. Examples include trees, construction and demolition material, and personal property.

DEBRIS CLEARANCE: Clearing of major road arteries by pushing debris to the roadside to accommodate emergency traffic.

DEBRIS DISPOSAL: Placing mixed debris and/or residue from volume reduction operations into an approved landfill or other approved location.

DEBRIS MANAGEMENT CENTER (DMC): The facility established at or near the Emergency Operations Center from which the debris management function is coordinated. (Note: Debris Management Centers can be established at both the local and state levels. The State’s facility is called the “State Disaster Debris Management Center.”)

DEBRIS MANAGEMENT CYCLE: The steps taken in the removal of disaster debris from an affected area. Steps include normal operations, increased readiness, response and recovery.

DEBRIS MANAGEMENT SITE: A location where debris is temporarily stored until it is sorted, processed, reduced in volume and/or taken to a permanent landfill or other approved location. (Note: This is new federal terminology. More commonly known as “Temporary Debris Reduction and Disposal [TDSR] Site.”)

DEBRIS MANAGEMENT TEAM (DMT): The team made up of representatives of governmental agencies and nongovernmental relief organizations who are responsible for managing the clearance, separation, removal, transportation, storage, reduction, and disposal of disaster debris. At the state level, the team is managed by the Michigan State Police, Emergency Management and Homeland Security Division (MSP/EMHSD). Its mission is to implement this Disaster Debris Management Plan, with the ultimate aim of protecting public health and safety and facilitating response and recovery operations by rapidly and efficiently managing disaster debris.

DEBRIS REMOVAL: Picking up debris and taking it to a Debris Management Site (TDSR Site) or permanent landfill or other approved location.

DEPARTMENT OF HOMELAND SECURITY (DHS): A Cabinet-level agency established within the federal government in 2002 to coordinate and report directly to the President on all issues related to domestic terrorism preparedness. The mission of the Department of Homeland Security is to oversee and coordinate a comprehensive national strategy to safeguard the country against terrorism and other homeland security threats, and to respond to any attacks that may occur.

DISASTER: An occurrence or threat of widespread or severe damage, injury, or loss of life or property resulting from a natural or human-made cause, including, but not limited to, fire, flood, snowstorm, ice storm, tornado, windstorm, wave action, oil spill, water contamination, utility failure, hazardous peacetime radiological incident, major transportation accident, hazardous materials incident, epidemic, air contamination, blight, drought, infestation, explosion, or hostile military or paramilitary action, or similar occurrences resulting from terrorist activities, riots, or civil disorders, as defined in Act 390, PA 1976, as amended.

DISTRICT COORDINATOR: The Michigan State Police, Emergency Management and Homeland Security Division employee serving at any of eight State Police District Headquarters, whose primary job is to work with local communities on emergency management and homeland security activities.

EMERGENCY: Any occasion or instance in which assistance is needed to supplement efforts to save lives, protect property and public health and safety, or to lessen or avert the threat of a catastrophe.

EMERGENCY COORDINATION CENTER (ECC): The site, established by a state agency, where agency officials gather to provide logistical support, policy direction and technical assistance to the agency representative in the State Emergency Operations Center (SEOC), and to strategically plan and implement the agency's disaster response and recovery activities. Each state agency is tasked to identify, develop and maintain an ECC as part of its emergency and business continuity planning efforts.

EMERGENCY MANAGEMENT ASSISTANCE COMPACT (EMAC): The interstate agreement that streamlines the assistance one governor can lend to another after a natural, technological or human-caused disaster (including a terrorist attack) by providing a framework for flexible response. The EMAC was first introduced in 1993 and the National Emergency Management Association (NEMA) administers the program on behalf of the member states. The EMAC is an arrangement of the states, by the states, and for the states. It addresses all the issues associated with requesting assistance, reimbursement of services, workman's compensation insurance, and liability in advance of a disaster. (In January 2001, Michigan became the 43rd state to join the EMAC.)

EMERGENCY MANAGEMENT COORDINATOR (EMC): The person appointed pursuant to Act 390, PA 1976, as amended, to coordinate emergency management activities for an emergency management program or state department. Also commonly called State Departmental, County or Local "Emergency Manager."

EMERGENCY MANAGEMENT AND HOMELAND SECURITY DIVISION (MSP/EMHSD): The division within the Department of State Police that coordinates the comprehensive emergency management and homeland security activities (prevention, mitigation, protection, preparedness, response and recovery) of state and local government and maintains the Michigan Emergency Management Plan.

EMERGENCY MANAGEMENT PROGRAM: The basic emergency planning and operational entity at the local government level. Each county has an appointed emergency manager and enabling legislation creating an emergency management program. In accordance with the provisions of Act 390, PA 1976, as amended, municipalities with a population of 10,000 or more may elect to also appoint an emergency manager and maintain a separate emergency management program from the county in which they are located.

EMERGENCY OPERATIONS CENTER (EOC): The site at which the coordination of information and resources to support incident management activities normally takes place. An EOC may be a temporary or permanent facility and may be organized by major functional disciplines (e.g., fire, law enforcement, medical services), by jurisdiction (e.g., federal, state, regional, county, city or tribal), or by some combination thereof. The debris management function would typically be managed from this location. (Also see State Emergency Operations Center.)

EMERGENCY OPERATIONS PLAN (EOP): The plan developed and maintained by an emergency management program as a counterpart to the Michigan Emergency Management Plan for the purpose of organizing and coordinating the emergency management activities of the jurisdiction(s) under the plan. An EOP usually consists of a basic plan or other introductory section with various supporting annexes (sections) for each service or function. The debris management function is typically found under the Public Works and Engineering (or similar) section of the plan. (Note: in MSP/EMHSD Publication 201 – "Local Emergency Planning Workbook," EOPs are referred to as "Emergency Action Guidelines" or "EAGs." Although differing slightly in format and level of content, EOPs and EAGs are, for all intents and purposes, identical documents.)

EMERGENCY SUPPORT FUNCTION (ESF): A grouping of state department / agency capabilities into an organizational structure to provide the support, resources, program implementation, and services that are most likely to be needed to prevent injuries, save lives, protect property and the environment, restore essential services and critical infrastructure, and help victims and communities return to normal, when feasible, following a disaster or emergency. ESFs serve as the primary operational-level mechanism through which state departments and agencies provide assistance to local communities. The Michigan Emergency Management Plan (MEMP) has eight ESFs, one of which (Public Works and Engineering) has direct bearing on state disaster debris management efforts. (Refer to the separate definition for Public Works and Engineering ESF.)

EXECUTIVE DIRECTIVE 2005-9: A Michigan Executive Directive issued by Governor Jennifer Granholm on September 29, 2005 that adopted the National Incident Management System (NIMS) as the state standard for incident management in Michigan.

FEDERAL AGENCY: Any department, independent establishment, government corporation or other agency of the executive branch of the federal government, including the U.S. Postal Service. This definition does not include the American Red Cross.

FEDERAL COORDINATING OFFICER (FCO): The federal officer appointed by the President to manage federal resource support activities related to Stafford Act major disasters and emergencies – including the provision of individual assistance, public assistance, and hazard mitigation assistance. The FCO is responsible for coordinating the timely delivery of federal disaster assistance resources and programs to the affected state and local governments, individuals and families, and the private sector.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA): The primary federal agency that coordinates emergency planning, preparedness, mitigation, response and recovery within the federal government, and administers the President's Disaster Relief Program. FEMA is housed within the federal Department of Homeland Security.

FEDERAL-STATE AGREEMENT: The document that states the understandings, commitments, and conditions for assistance under which FEMA disaster assistance shall be provided. This agreement imposes binding obligations on FEMA, the State, and local governments in the form of conditions for assistance which are legally enforceable.

FORCE ACCOUNT LABOR: State, tribal, or local government employees engaged in debris removal activities.

GARBAGE: Waste that is regularly picked up by the local Department of Solid Waste Management (or similar agency). Examples include food, plastics, wrapping, and papers.

HAZARDOUS WASTE: Material and products from institutional, commercial, recreational, industrial, and agricultural sources that contain certain chemicals with one or more of the following characteristics, as defined by the U.S. Environmental Protection Agency (EPA): 1) toxic; 2) flammable; 3) corrosive; and/or 4) reactive.

HEAVY EQUIPMENT LOG: A record of heavy equipment (trucks, trailers, excavators, etc.) that has been rented from a private source that is used for disaster debris removal activities. When local and state resources are not available, it may be necessary to lease equipment such as this.

HOMELAND SECURITY PRESIDENTIAL DIRECTIVE (HSPD)-5: A Presidential directive issued on February 28, 2003 that is intended to enhance the ability of the United States to manage domestic incidents (which include terrorist attacks, major disasters, and other emergencies) by establishing a single, comprehensive National Incident Management System (NIMS). Refer to the National Incident Management System and National Response Framework (NRF) definitions for additional information.

HOUSEHOLD HAZARDOUS WASTE (HHW): Used or leftover contents of consumer products that contain chemicals with one or more of the following characteristics, as defined by the U.S. Environmental Protection Agency (EPA): 1) toxic; 2) flammable; 3) corrosive; and/or 4) reactive. Examples of HHW include small quantities of normal cleaning and maintenance products, latex and oil based paint, cleaning solvents, gasoline, oils, swimming pool chemicals, pesticides, and propane gas cylinders.

IMMEDIATE THREAT: The threat of damage to improved private or public property or to lives, public health, and safety as a result of an event that could reasonably be expected to occur within five years.

INCIDENT: An occurrence or event, natural or human-caused, which requires an emergency response to protect life or property. Incidents can include major disasters, emergencies, terrorist attacks and terrorist threats.

INCIDENT COMMAND POST (ICP): The field location at which the primary tactical-level, on-scene incident command functions are performed. The ICP may be co-located with other incident facilities and is normally identified by a green rotating or flashing light.

INCIDENT COMMAND SYSTEM (ICS) – a.k.a. INCIDENT MANAGEMENT SYSTEM (IMS): A standardized on-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. The ICS is the combination of facilities, equipment, personnel, procedures, and communications operating with a common organizational structure, designed to aid in the management of resources during incidents. The ICS is used for all types of emergencies and is applicable to small as well as large and complex incidents. (Note: The State of Michigan follows an IMS in the State Emergency Operations Center [SEOC] for all disasters and emergencies. Refer to the Direction and Control ESF in the Michigan Emergency Management Plan for more information. The SEOC IMS is consistent and compatible with the National Incident Management System [NIMS]. Refer to the NIMS definition.)

INCIDENT COMMANDER (IC): The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

JOINT FIELD OFFICE (JFO): A temporary federal facility established locally to provide a central point for federal, state, local and tribal officials with responsibility for incident oversight, direction and/or assistance to effectively coordinate protection, prevention, mitigation, preparedness, response and recovery actions.

JOINT INFORMATION CENTER (JIC) – a.k.a. JOINT PUBLIC INFORMATION CENTER (JPIC): A facility established to coordinate all incident-related public information activities. It is the central point of contact for all news media at the scene of the incident. Public information officials from all participating agencies and organizations are co-located at the JIC. (Note: JIC is the preferred name; JPIC is now obsolete.)

LOCAL GOVERNMENT:
1) Any county, city, village, town, district, regional authority, public college or university, or other political subdivision of any state, any Indian Tribe or authorized tribal organization, or Alaskan native village or organization; and 2) Any rural community or unincorporated town or village or any other public entity for which an application for assistance is made by a state or political subdivision.

LOCAL STATE OF EMERGENCY: A declaration by a county or municipality with an appointed emergency management coordinator (pursuant to Act 390, PA 1976, as amended) when circumstances indicate that the occurrence or threat of widespread or severe damage, injury, or loss of life or property from natural or human-made cause exists.

MAJOR DISASTER: Any natural catastrophe (including any hurricane, tornado, storm, high-water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any flood, fire, or explosion, in any part of the United States which in the determination of the

President cause damage of sufficient severity and magnitude to warrant major disaster assistance under the Stafford Act to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

MICHIGAN EMERGENCY MANAGEMENT ACT: Act 390, PA 1976, as amended, the basic state emergency management enabling legislation. This Act prescribes the power and duties of the Governor and certain state and local agencies and officials related to preparing for, responding to, recovering from, and mitigating disasters and emergencies; prescribes immunities and liabilities related to disaster relief work; and establishes the organizational framework for the emergency management system used in the state.

MICHIGAN EMERGENCY MANAGEMENT PLAN (MEMP): The plan developed and continuously maintained by the Emergency Management and Homeland Security Division, Department of State Police, pursuant to Act 390, PA 1976, as amended, for the purpose of coordinating the homeland security and emergency management activities of prevention, mitigation, preparedness, response and recovery within the state.

MICHIGAN VOLUNTARY ORGANIZATIONS ACTIVE IN DISASTER (MIVOAD): The Michigan chapter of the National Voluntary Organizations Active in Disaster (NVOAD), an umbrella organization of established and experienced voluntary organizations that provide disaster services in all phases of emergency management, but with emphasis on response and recovery. The MIVOAD fosters cooperation, communication, coordination, and collaboration among its Michigan-based voluntary organizations. In the response and recovery phases, each individual organization functions independently, yet cooperatively. The MIVOAD serves as a clearinghouse and coordinating body for debris management services, working in coordination and cooperation with other state agencies in the State Emergency Operations Center involved in the debris management function. For smaller, more localized disasters, MIVOAD may work directly with the affected local government's Emergency Operations Center in debris management activities.

MONITORING: Actions taken to ensure that a contractor complies with the contract scope-of-work.

MUTUAL AID AGREEMENT: A written understanding between communities and states obligating assistance during a disaster.

NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS): A system mandated by Homeland Security Presidential Directive (HSPD)-5 that provides a consistent nationwide approach for federal, state, tribal, and local governments to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents (which includes terrorist attacks, major disasters, and other emergencies), regardless of their cause, size or complexity. To provide for interoperability and compatibility among federal, state and local capabilities, the NIMS includes a core set of concepts, principles, and terminology. HSPD-5 identifies these as the incident command system; multi-agency coordination systems; unified command; training; identification and management of resources (including systems for classifying types of resources); qualifications and certifications; and the collection, tracking, and reporting of incident information and incident resources. (Note: the Incident Management System [IMS] for the State Emergency Operations Center, as described in the Direction and Control ESF of the MEMP, is compatible with the NIMS as currently developed.)

NATIONAL RESPONSE FRAMEWORK (NRF): The plan developed by the federal Department of Homeland Security (DHS) to replace the National Response Plan (NRP) which had been effect since January 6, 2005. **The National Response Framework officially replaced the NRP on March 22, 2008. See separate definition below for the NRP.**

NATIONAL RESPONSE PLAN (NRP): The plan developed by the federal Department of Homeland Security (DHS), pursuant to Homeland Security Presidential Directive (HSPD)-5, which integrates the family of federal domestic prevention, preparedness, response and recovery plans into a single, all-discipline, all-hazards plan for domestic incident management. The NRP was built on the template of the National Incident Management System (NIMS), which provides a standardized framework for incident management at all jurisdictional levels – regardless of the cause, size or complexity of the incident. The NRP was officially completed and released by the DHS on January 6, 2005. It was amended on May 25, 2006 with the issuance of the "Notice of Change to the National Response Plan." The NRP incorporated relevant portions of and superseded the Federal Response Plan (FRP), which had been in place since the early 1990s. **On March 22, 2008 the National Response Framework (NRF) officially replaced the NRP. See separate definition above for the NRF.**

NONGOVERNMENTAL ORGANIZATION (NGO): A private nonprofit entity that is based on interests of its members, individuals, or institutions and that is not created by a government but may work cooperatively with government. Such organizations serve a public purpose, not a private benefit. Examples include faith-based charity organizations and the American Red Cross.

PASSES (a.k.a. "SWEEPS"): The number of times a contractor passes through a community to collect all disaster-related debris from the rights-of-way. Usually limited to three passes through the community, although incident-specific conditions may increase or decrease that number.

PRELIMINARY DAMAGE ASSESSMENT (PDA): An assessment conducted by teams of federal, state and local officials to determine the severity and magnitude of a disaster and also to identify capabilities and resources of state, local and other federal agencies.

PRINCIPAL FEDERAL OFFICIAL (PFO): The federal official designated by the Secretary of Homeland Security to act as his/her representative locally to oversee, coordinate and execute the Secretary's incident management responsibilities under HSPD-5.

PRIVATE NONPROFIT ORGANIZATION: Any nongovernmental agency or entity that currently has:

- An effective ruling letter from the U.S. Internal Revenue Service, granting exemption under section 501(c), (d), or (e) of the Internal revenue Service Code of 1954; or

- Satisfactory evidence from the State that the non-revenue producing organization or entity is a nonprofit one organized or doing business under state law.

PUBLIC WORKS AND ENGINEERING ESF: The Emergency Support Function (ESF) in the Michigan Emergency Management Plan (MEMP) that is concerned with issues pertaining to disaster-related damage and impact to critical public facilities and infrastructure, including the transportation, communications and energy distribution networks. Disaster debris management falls under the purview of the Public Works and Engineering ESF.

RECOVERY: Recovery, in this document, includes all types of emergency actions dedicated to the continued protection of the public or to promoting the resumption of normal activities in the affected area.

RECYCLING: The recovery and reuse of metals, soils, and construction materials that may have a residual monetary value.

RIGHTS-OF-WAY: The portions of land over which a facility, such as highways, railroads, or power lines are built. Includes land on both sides of the highway up to the private property line.

REGION V REGIONAL RESPONSE PLAN (for the NRF): The plan developed and maintained by the federal departments, agencies and states of FEMA Region V, for the purpose of facilitating the delivery of all types of federal disaster relief assistance to the six states in the region. This plan is an operational support plan to the National Response Framework.

REGIONAL RESPONSE COORDINATION CENTER (RRCC): A standing facility at each FEMA regional office that is activated to coordinate regional response efforts and implement local federal program support until a Joint Field Office (JFO) is established. (The RRCC replaces the Regional Operations Center – ROC.)

SCALE / WEIGH STATION: A scale used to weigh trucks as they enter and leave a landfill. The difference in weight determines the tonnage dumped and a tipping fee is charged accordingly. Also may be used to determine the quantity of debris picked up and hauled.

STAFFORD ACT: The Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 100-707, signed into law November 23, 1988. The Stafford Act renamed and amended the Disaster Relief Act of 1974, P.L. 93-288. The Stafford Act was subsequently amended by the Disaster Mitigation Act of 2000, P.L. 106-390 (October 30, 2000), as well as several Acts signed into law in October of 2006 (i.e., Department of Homeland Security Appropriations Act of 2007, P.L. 109-295, October 4, 2006; Pets Evacuation and Transportation Standards Act of 2006, P.L. 109-308, October 6, 2006; and Security and Accountability for Every Port Act of 2006, P.L. 109-347, October 13, 2006).

STAGING AREA: A large parking lot or other suitable open area to provide a base for registration, unloading and transfer of resources, assembly of persons, and a rally point for mutual aid forces. For debris management purposes, a staging area could be officially designated points such as vacant commercial lots, nongovernmental organization warehouse facilities, governmental warehouse facilities, armories, county fairgrounds, highway / public works maintenance garages, airports, parks and recreation areas, or possibly shopping center parking lots (providing there is written permission from the owner).

STATE COMMAND POST (SCP): A post established near the scene of a disaster and manned by representatives of applicable state departments to coordinate state response activities.

STATE COORDINATING OFFICER (SCO): The person appointed by the Governor to manage all aspects of a federally-declared disaster, in cooperation with the Federal Coordinating Officer (FCO). The Division Commander or Assistant Division Commander of the Emergency Management and Homeland Security Division, Department of State Police is normally appointed to this position.

STATE DEBRIS MANAGEMENT SYSTEM: The collection of personnel, facilities, technical expertise, and material resources which are designated to assist affected local governments in the clearance, removal, transport, sorting, storage, recycling, and ultimate disposal of disaster debris. The State of Michigan's debris management system consists of: 1) the State Disaster Debris Management Team; 2) the State Disaster Debris Management Center; 3) required support facilities such as Staging Areas and the Base / Camps; and 4) the available material resources and expertise of involved nongovernmental organizations and the Michigan Departments of Agriculture, Corrections, Environmental Quality, Management and Budget, Military and Veterans Affairs, Natural Resources, and Transportation that can be devoted to debris clearance, removal, reduction, and disposal operations.

STATE DEBRIS MANAGER: The MSP/EMHSD employee that is responsible for managing a debris operation on behalf of the State.

STATE DIRECTOR OF EMERGENCY MANAGEMENT AND HOMELAND SECURITY: The Director of the Department of State Police or his/her authorized representative. The Division Commander of the Emergency Management and Homeland Security Division, Department of State Police is the designated Deputy State Director of Emergency Management and Homeland Security.

STATE DISASTER DEBRIS MANAGEMENT CENTER: The facility established at or near the State Emergency Operations Center (SEOC) from which the debris management function is coordinated.

STATE DISASTER DEBRIS MANAGEMENT TEAM: Those state agency representatives that are part of the State's debris management operation. Team members are involved in all phases of the debris management cycle, including planning and preparedness activities as well as the response and recovery phases. (Also see "Debris Management Team".)

STATE EMERGENCY OPERATIONS CENTER (SEOC): The primary center for coordination of state government response and recovery operations in time of disaster or emergency. The SEOC is maintained and operated by the Emergency Management and Homeland Security Division, Department of State Police.

STATE PUBLIC ASSISTANCE OFFICER (SPAO): The person appointed by the State Coordinating Officer to manage the Public Assistance Grant Program on behalf of the State.

STATE OF DISASTER OR STATE OF EMERGENCY: A declaration by executive order or proclamation by the Governor under the provisions of Act 390, PA 1976, as amended, which activates the response and recovery aspects of state and local emergency operations plans.

TEMPORARY DEBRIS STORAGE AND REDUCTION (TDSR) SITE: A location where debris is temporarily stored until it is sorted, processed, reduced in volume and/or taken to a permanent landfill or other approved location. (Note: New federal terminology refers to TDSR Sites as "Debris Management Sites," although TDSR Site is still more commonly used.)

TERRORISM: An intentional, unlawful use of force, violence or subversion against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political, social, or religious objectives.

TIPPING FEE: A fee based on weight or volume of debris dumped that is charged by landfills or other waste management facilities to cover their operating and maintenance costs. The fee may also include amounts to cover the cost of closing the current facility and/or opening a new facility.

TRASH: Non-disaster related yard waste, white metals, or household furnishings placed on the curbside for pickup by local solid waste management personnel. (A resident normally must call for pickup of trash.) Not synonymous with garbage.

UNIFIED COMMAND: An application of the Incident Command System (ICS) used when there is more than one agency with incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the Unified Command to establish their designated Incident Commanders at a single Incident Command Post (ICP) and to establish a common set of objectives and strategies and a single Incident Action Plan (IAP).

WEAPON OF MASS DESTRUCTION (WMD): Under Title 18, U.S.C. § 2332a, "(1) Any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than four ounces, or missile having an explosive or incendiary charge of more than one-quarter ounce, or mine or similar device; (2) any weapon that is designed or intended to cause death or serious bodily injury through the release, dissemination, or impact of toxic or poisonous chemicals or their precursors; (3) any weapon involving a disease organism; or (4) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life." Weapons of Mass Destruction are also commonly referred to as "CBRNE" Weapons – an acronym for chemical, biological, radiological, nuclear and explosives / incendiary devices.

WHITE GOODS (a.k.a. "WHITE METALS"): Household appliances such as refrigerators, freezers, stoves, washers and dryers.

SITUATION AND ASSUMPTIONS:

Initiating Disaster Conditions. Most disasters in Michigan do not generate tremendous quantities of disaster debris. As a result, the disaster debris management function is not frequently activated at the state level, but rather is handled adequately at the local level with appropriate state oversight. Normally, a large-scale debris cleanup effort would only be expected in those rare disaster situations where excessive debris accumulates that overwhelms local and regional debris management capabilities.

Based on past experiences in Michigan and elsewhere, the types of disasters most likely to generate large amounts of debris are those that result in significant property and environmental damage. In Michigan, those disasters include:

- Tornadoes / Severe Storms
- Floods
- Wildfire
- Ice Storms
- Terrorist Attacks (that result in significant physical damage)
- Widespread Plant or Animal Disease (that results in significant quantities of dead vegetation or animals)
- Widespread Insect Infestation (that results in significant quantities of dead vegetation)

These disasters may be beyond the capability of local jurisdictions (and possibly the State) to handle in terms of debris management. The likely impact on local and state personnel and resources would necessitate an organized structure to meet basic debris management needs. Other disasters may also create the need for debris removal, but these situations are most likely to generate significant quantities of debris. Refer to the Attachment titled "Debris Categories" for a more detailed analysis of the types of debris that could be expected from these disasters.

Major Planning Assumptions. In addition to the basic planning assumptions outlined above pertaining to initiating disaster conditions, the following additional planning assumptions have guided the development of this plan:

- The successful management of disaster debris typically requires a united, cooperative effort by local, state and federal agencies, private contractors, nongovernmental organizations, business and industry, public and private institutions, and the general public.

- Large scale / catastrophic debris generating disasters will likely overwhelm local jurisdictions in their clean up efforts, necessitating state involvement in the management of the disaster debris operation.
- Full use of existing local, state, and nongovernmental organization debris management resources should occur before federal assistance is sought.
- Initial debris removal will concentrate on the clearance of roads for emergency responders and life saving activities.
- Hazardous material / environmental issues will have to be addressed throughout the debris management operation.

FOR MOST DISASTERS, THE DISASTER DEBRIS MANAGEMENT FUNCTION CAN, AND SHOULD, BE HANDLED BY AND THROUGH THE AFFECTED LOCAL GOVERNMENTS AND THEIR EMERGENCY OPERATIONS CENTERS. HOWEVER, WIDESPREAD AND/OR PARTICULARLY DAMAGING DISASTERS WILL LIKELY OVERWHELM LOCAL RESPONSE AND RECOVERY CAPABILITIES; THEREFORE, STATE ASSISTANCE IN DISASTER DEBRIS MANAGEMENT MAY BE REQUIRED. IN THOSE SITUATIONS, THIS PLAN WOULD BE ACTIVATED.

OPERATIONS AND ORGANIZATION:

Clearance and Removal Operations. Immediately following a major disaster, local damage assessment teams should (as part of the damage / needs assessment process) estimate the quantity and type of debris, and assist in prioritizing debris removal activities. In general, the debris management operation should be divided into two major phases, as follows:

Phase I: Debris Clearance. During the first 24 to 72 hours after the disaster, debris activities should emphasize clearing key roads for emergency access by pushing debris to the edge of the right-of-way, rather than restoring roads to pre-event conditions. Phase I activities should also include identifying and removing any obvious debris situations that may pose an immediate threat to public health and safety. (Examples may include dangerously positioned, damaged trees; debris piles that obstruct traffic visibility; fire prone debris piles; etc.) This phase is generally concurrent with the Response Phase of emergency planning. Although Phase I is not the primary focus of the Debris Management Plan, it is a crucial time for organizing the majority of the tasks outlined in the plan. Debris clearance and utility restoration coordination will expedite clearance of utility impacted debris and restoration of services. Without close coordination, debris clearance and utility restoration may work at cross-purposes, adversely affecting both functions. Good coordination will also yield improved damage and debris assessments and more accurate work scheduling.

Phase II: Debris Removal. This phase entails the actual management of accumulated debris. Phase II may last up to a year or longer and may involve reassessment of debris quantities, operations of debris staging areas, public education, and debris separation, collection, storage, reduction, recycling, and disposal activities. Debris removal may begin during the emergency planning Response Phase and will constitute a major part of the Recovery Phase.

Damage Assessment / Needs Assessment. The Michigan Emergency Management Plan (MEMP) / Information and Planning ESF, and MSP/EMHSD Publication 901 – "Damage Assessment Handbook," describe the damage assessment system used by state agencies and local governments in Michigan. That system helps determine the extent of loss or harm from natural and human-made disasters. Part of the analysis that occurs during the process of collecting and compiling the damage assessment data involves identifying the quantity of debris generated by the disaster and the anticipated needs of the affected communities with regard to debris management. This "needs assessment" portion of the process is crucial because of its direct relationship to organized action by response and long-term recovery / relief personnel.

Many times these determinations are made by the local governments submitting the assessment data to the State Emergency Operations Center (SEOC) through the Emergency Management and Homeland Security Division, Department of State Police (MSP/EMHSD). Other times, it is the SEOC Planning Section and/or MSP/EMHSD staff that makes those determinations, based on the collective data submitted by many local governments. In either event, once the determination is made that disaster debris management is likely to become an issue, the SEOC Incident Commander must make the decision whether or not to activate the State Disaster Debris Management Team and State Disaster Debris Management Center as part of the SEOC structure.

Direct Resource Requests. Apart from the initial damage assessment / needs assessment process described above, local governments in Michigan can also articulate debris management resource requirements to the SEOC throughout the incident response and recovery phases via the "E Team" incident management system. Within the E Team menu of reports and forms is a "Resource Request" form that can be completed by a local government requesting a specific resource, and then submitted through E Team to the SEOC for review, analysis and follow up

action. Such resource requests would typically be made when the resource in question was not readily available locally or regionally through existing mutual aid / assistance agreements. (Note: the requesting jurisdiction can simply click on the "Search / Add" button for the field "Resource Type / Kind" and then type in "debris management assistance" in the "Other" field at the bottom.)

In some cases, the E Team Resource Request will be filled by a state agency using the agency's existing resources, or perhaps by a federal agency (if involved) under a federal Stafford Act declaration or under its own enabling authorities. In other cases, it may be possible to fill resource requests through disaster donations or a request through the nationwide EMAC. E Team Resource Requests, then, can help establish the need for disaster debris management assistance and provide direction to state agency staff regarding the types and quantities of resources that must be secured to meet the anticipated needs of the debris management operation.

Debris Management Operations: Roles and Responsibilities:

Local Government. Local government is the first to respond to disasters and emergencies. Response efforts are first directed to activities that protect lives, such as evacuations, sheltering, fire fighting, utility restoration, etc. Initial debris removal efforts are part of that first response and should be directed toward 1) clearing roads of debris to provide access for emergency vehicles and life saving personnel, and 2) removing any obvious debris situations that are immediate threats to public health and safety.

Mutual Aid. Local governments are strongly encouraged to enter into mutual aid agreements (including the statewide Michigan Emergency Management Assistance Compact – MEMAC) to provide assistance to one another during a disaster or emergency. This is particularly important for debris management purposes, as the capabilities of single jurisdictions to manage large debris operations can be quickly overwhelmed. The agreements should either stipulate reciprocal services or set labor and equipment rates. In order for emergency assistance provided under a mutual aid agreement to be eligible for reimbursement by FEMA, the agreement must be in writing and in place before the incident occurs. Additional requirements for FEMA eligibility include:

- The assistance should be directly related to the disaster and meet other FEMA eligibility requirements;
- The mutual aid agreement should not be contingent upon federal funding or a declaration of major disaster by the federal government;
- The eligible applicant receiving aid must request the grant from FEMA. The entity providing aid may not apply for a grant directly; and
- The applicant must be able to provide documentation that aid was requested, that aid was received and costs were incurred by the entity providing aid.

State Government. The State of Michigan can provide supplemental assistance to stricken local communities when the required response efforts overwhelm local capabilities. Such assistance is requested through the Michigan State Police / Emergency Management and Homeland Security Division (MSP/EMHSD) by following the processes specified in MSP/EMHSD Publication 901 – "Damage Assessment Handbook," and the Michigan Emergency Management Plan (MEMP) with regard to declaring a local "state of emergency" and requesting state assistance.

If state assistance for debris management purposes is required, it can be authorized by the Governor upon the declaration of a "state of disaster" or "state of emergency" under 1976 PA 390, the Michigan Emergency Management Act. In some cases, state assistance may also be provided under a state agency's separate legal authorities. Assistance may include, but is not limited to: 1) overall management of the debris operation; 2) technical assistance with various aspects of the operation; 3) the provision of equipment and personnel to provide direct assistance in debris operations; 4) possible financial assistance (under Section 19 of 1976 PA 390, or by direct legislative appropriation); or 5) any combination of these forms of assistance. All such assistance will be provided through the State Emergency Operations Center (SEOC) and be coordinated by the MSP/EMHSD, in accordance with the MEMP.

If state debris management capabilities (including activation of the MEMAC) are overwhelmed, the State of Michigan has two options available to it: 1) seek assistance from other states via the national Emergency Management Assistance Compact (EMAC) – the state-to-state mutual aid agreement; and/or 2) seek assistance from the federal government through the Federal Emergency Management Agency (FEMA).

EMAC Assistance. All assistance requested under the EMAC must go through the MSP/EMHSD – the steward agency for the EMAC within the State of Michigan. Based on local and/or state agency identified debris

management needs, the MSP/EMHSD will request the assistance using the standard process required by the EMAC. Assistance for debris management purposes under the EMAC may include, but is not limited to: 1) professional expertise for overall management of the operation; 2) equipment and operators for transportation, collection, sorting, or disposal of debris; 3) technical assistance with specific aspects of the operation; or 4) any combination of these forms of assistance. The State of Michigan can either accept or decline the assistance proposals provided by other states, depending on such factors such as cost, timing of assistance, logistical requirements of the providing entity, etc. All assistance provided under the EMAC will be coordinated through the SEOC by the MSP/EMHSD and other involved state agencies.

Federal Government. If the response and recovery effort is beyond the combined capabilities of the affected local government(s) and the State of Michigan – even when supplemented by mutual aid – it will likely be necessary to request federal disaster relief assistance under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended. Such requests are made by the Governor, through the FEMA Region V office (in Chicago, Illinois), to the President. Under the Stafford Act, the President may declare that a "major disaster" or "emergency" exists within the affected areas of Michigan and provide disaster relief assistance to meet the specific needs of the situation.

Federal assistance with debris management activities can be provided: 1) through direct assistance provided by a federal agency such as the U.S. Army Corps of Engineers (via mission assignment under the National Response Framework or via the agency's own enabling legislation); 2) through debris management technical assistance by FEMA; or 3) through the federal Public Assistance Grant Program (PAGP) under Categories A (Debris Removal and Disposal) or B (Emergency Protective Measures). These forms of assistance must be specifically requested in the Governor's declaration request letter. All such assistance provided by the federal government is coordinated through the SEOC and/or the established Joint Field Office (JFO) by the MSP/EMHSD and other involved state agencies.

State Debris Management System. The state disaster debris management system is designed to assist affected local governments in the clearance, removal, transport, sorting, storage, recycling, and ultimate disposal of disaster debris. The State of Michigan's debris management system consists of: 1) the State Disaster Debris Management Team; 2) the State Disaster Debris Management Center (previously referred to as "Tree Central"); 3) other facilities required to support the debris management effort; and 4) the available material resources and expertise of the Michigan Departments of Agriculture, Corrections, Environmental Quality, Management and Budget, Military and Veterans Affairs, Natural Resources, and Transportation that can be devoted to debris clearance, removal, reduction, and disposal operations.

Existing State Capabilities. The MSP/EMHSD has extensive experience in large-scale debris management operations, having managed regional debris operations for Federal Disasters 1181 (in 1997) and 1226 (in 1998). Both of those disasters involved tornadoes and/or severe storms that generated tremendous quantities of vegetative and construction debris. In addition, the MSP/EMHSD also managed a large-scale aquatic vegetation removal and disposal operation on Lake St. Clair in 1994 caused by severe drought conditions that altered the lake ecosystem and caused massive vegetation growth. All of these incidents drew extensively on state agency resources. However, even when the extensive knowledge / experience base and the collective resources of the seven aforementioned state agencies are accounted for, the State still has limited capabilities for large-scale / multi-jurisdiction debris clearance, removal and disposal operations. Therefore, it must rely on private contractors and local government forces to provide much of the equipment, operators, and technical expertise required for rapid and effective debris clearance, removal, reduction, and disposal.

Lead Agency for Debris Management. In accordance with the Public Works and Engineering ESF in the MEMP, the MSP/EMHSD has lead responsibilities for coordinating debris management activities subsequent to large-scale disasters or emergencies – especially those that involve multiple jurisdictions and/or that hit densely populated urban areas. As indicated in the Public Works and Engineering ESF, the MSP/EMHSD works with selected debris removal contractors, local officials, and involved state agencies (indicated above) in fulfilling this assigned responsibility. When a state-managed debris operation is required, a State Debris Manager will be appointed from within the MSP/EMHSD to manage and coordinate the debris management function at the state level. The State Debris Manager is, by virtue of position, the manager of the State Disaster Debris Management Team and State Disaster Debris Management Center.

State Disaster Debris Management Team. The State Disaster Debris Management Team consists of appropriate representatives of the following Michigan state agencies and nongovernmental organizations:

- MSP/EMHSD (overall management and coordination; State Public Assistance Officer; plan development / revision services; federal resource requests; liaison to FEMA/DHS; Michigan Citizen Corps resources)
- Michigan Department of Agriculture – MDA (technical assistance for agricultural crop and livestock debris disposal)
- Michigan Department of Corrections – MDOC (inmate work crews / vehicles to support debris clearance and removal)
- Michigan Department of Environmental Quality – MDEQ (environmental requirements for debris disposal)
- Michigan Department of Management and Budget – MDMB (crews / vehicles / facilities to support debris clearance and removal; emergency procurement procedures)
- Michigan Department of Military and Veterans Affairs – MDMVA (crews / vehicles / facilities to support debris clearance and removal; technical engineering expertise; supplemental communications support)
- Michigan Department of Natural Resources – MDNR (coordinate forest / wildlife debris disposal; crews / vehicles / facilities to support debris clearance and removal)
- Michigan Department of Transportation – MDOT (crews / vehicles / facilities to support debris clearance and removal; technical engineering expertise; management contacts with local / county road agencies)
- Michigan Voluntary Organizations Active in Disaster – MIVOAD (volunteers to support debris clearance and removal)

Although not a formal part of the State Disaster Debris Management Team, the Michigan Department of Human Services / Michigan Community Service Commission could be called upon to provide additional labor resources, if required, through the Michigan AmeriCorps and other volunteer programs (in accordance with the Human Services ESF of the MEMP). In addition, the Michigan Department of Community Health may be called upon to provide technical advice and assistance to agencies involved in animal debris disposal operations in order to protect public health (in accordance with the Widespread Plant or Animal Disease Procedures in the MEMP).

The exact composition of the State Disaster Debris Management Team for each disaster will be determined by the SEOC Incident Commander and/or Operations Section Chief, based on the disaster conditions and the anticipated scope and magnitude of the debris management effort. For most disaster situations involving a debris management operation, the entire membership of the Team will not be needed. However, particularly widespread or catastrophic incidents may require the full activation. In all instances, the environmental regulatory agencies (MDEQ, and for dead animals the MDA and/or MDNR) will be activated to ensure compliance with environmental laws and regulations during debris management operations. (Refer to the Attachment titled “State Disaster Debris Management Team – Membership Roster / Contact List” for a listing of and contact information for State Disaster Debris Management Team members.)

The State Disaster Debris Management Team serves ten basic functions as follows:

1. Assisting state, local, and federal officials in identifying disaster debris management needs;
2. Providing for the overall management and coordination of the debris management operation;
3. Providing / coordinating resource support to the debris management operation (personnel, equipment, materials, vehicles, facilities, communications);
4. Providing technical expertise in all facets of debris management operations;
5. Coordinating with involved federal and local agencies and nongovernmental organizations;
6. Assisting in the identification, establishment, operation, and closeout of required debris management support facilities;
7. Monitoring / tracking the activities and progression of the debris management operation;
8. Identifying and resolving issues as they arise (troubleshooting / problem solving);
9. Establishing / managing a system for receiving and addressing inquiries from the public, unsolicited contractors, etc.; and
10. Providing operation-specific information for required reports, briefings, media releases, etc.

State Disaster Debris Management Center Overview. The State Disaster Debris Management Center serves as the central coordination point for all state-level activities and operations related to the disaster debris management function. It is the location in which the State Disaster Debris Management Team works. The State Disaster Debris Management Center will be activated by the MSP/EMHSD when state assistance in managing the debris operation is required. If possible, the Center will be physically located in the SEOC, at or near the Public Works and Engineering ESF. In cases of crowding in the SEOC, the Center may be located immediately adjacent to the SEOC in an existing office or conference room, or it may be located at another facility with direct phone links to the Public Works and Engineering ESF in the SEOC. The configuration of the Center will change from disaster to

disaster, based on the situational needs and anticipated level of activity. At a minimum, the Center will require one computer terminal and one telephone, with workspace and seating for each Debris Management Team member. If necessary, the MSP/EMHSD may establish one or more satellite offices for the Center to allow for greater coordination and a more efficient and effective delivery of services.

Generally, debris management operations take several weeks to several months to complete and closeout. The State Disaster Debris Management Center will remain open, and the State Disaster Debris Management Team will remain activated, for as long as is required to complete and closeout the debris management operation. The decision on when to terminate the Center and to de-activate the Team will be made by the SEOC Incident Commander, based on input received from the Team and the affected local governments.

Debris Management Function within the SEOC Structure. Administratively, the Disaster Debris Management function will be placed under the Operations Section within the SEOC and will be under the purview of the SEOC Operations Section Chief. The SEOC Operations Section Chief will oversee both the State Disaster Debris Management Team and State Disaster Debris Management Center.

The State Disaster Debris Management Center will be established under the Operations Section as a Debris Management Branch. It will be staffed by the State Disaster Debris Management Team and other required support staff. The Center will be supported by the SEOC Planning Section, which has responsibilities related to the initial assessment and estimation of need for disaster debris management, and for the collection and compilation of operational data related to debris management. In addition, the SEOC Finance / Administrative Section is responsible for tracking costs related to the debris management operation, with the support and assistance of the other involved sections. The SEOC Incident Management Section will provide general strategic direction and oversight of the debris management operation, and make policy decisions as required. The Incident Management Section is also responsible for all public information related to the debris management operation.

If the decision is made not to activate the State Disaster Debris Management Team / Center, the issue of debris management will be addressed by the combination of the core members of the Public Works and Engineering ESF and the Operations Section Chief within the SEOC, working together in concert. The decision on whether to activate the State Disaster Debris Management Team / Center within the SEOC will be based on many factors, including the disaster conditions, the availability of appropriate staff, the capabilities of the affected local jurisdiction(s), and the anticipated volume of debris.

Debris Management Support Facilities. Depending on the situational circumstances, the following facilities may have to be established to directly support the debris management operation:

- Local Disaster Debris Management Center;
- Collection Center(s);
- Staging Area(s);
- Base / Camp(s);
- Temporary Debris Storage and Reduction Sites;
- Satellite Disaster Debris Management Office(s); and
- Federal Disaster Debris Management Center (Joint Field Office – <u>only</u> if a federal declaration is made and debris removal is being addressed directly by federal forces, or under the Public Assistance Grant Program).

Figure 2 on page 24 depicts the relationship between these crucial facilities. Following is a summary of the specific requirements and functions of each support facility:

<u>Local Disaster Debris Management Center</u>. This facility would be similar in nature and function to the State Disaster Debris Management Center, only it would be used to coordinate local debris management activities. The Local Disaster Debris Management Center may be physically located in the local Emergency Operations Center (EOC), at or near the public works / engineering function. It may also be located adjacent to or in close proximity to the EOC, or it may be located at another facility with direct phone links to the public works / engineering function in the EOC. In many cases, the Local Disaster Debris Management Center may be located at the local public works or highway office / maintenance garage or a similar facility. Like the State Disaster Debris Management Center, the configuration of the Local Disaster Debris Management Center will be based on the disaster situation and the anticipated duration and level of activity. At a minimum, the Center will require one computer terminal and one telephone, with workspace and seating for each Debris Management Team member.

Refer to the "Local Roles and Responsibilities" section for a description of the local debris management organizational structure that may staff the Local Disaster Debris Management Center.

Collection Centers. An alternative to curbside debris collection is to have residents transport their debris to a common location known as a Collection Center. Typically, large roll-off bins are placed within the public rights-of-way or on public property for residents to bring their debris for collection. Collection Centers are a viable option in those situations where curbside collection is not practical, such as in rural / sparsely populated areas or in logistically difficult conditions (e.g., neighborhoods with steep terrain or limited ingress / egress options). Separate bins / piles are designated for each type of debris. Although collection costs are lower under this option (residents transport and separate the debris themselves), site planning and monitoring costs may offset some or all of the savings. The Collection Center sites must be designed for proper traffic and pedestrian circulation, vehicle ingress / egress and unloading, and collection bin exchanges and/or debris pile removal. In addition, staff will have to be stationed at the Collection Centers during the collection period (and in some cases during off-hours) to provide security, to have empty bins brought in when current ones are full, to ensure that debris is placed in the correct bins, and to ensure that non-disaster related debris is not dumped at the site.

Depending on incident conditions and jurisdictional preference, Collection Centers may be part of a Temporary Debris Storage and Reduction (TDSR) Site (see description below) or they may be separate locations altogether. If public drop-off areas are included with a TDSR Site, they must be carefully designed for passenger vehicle traffic and public safety. Debris collected at Collection Centers will be transported by local work crews or designated contractors to a TDSR Site for recycling and/or reduction, or directly to landfills for final disposal.

Staging Areas. Staging areas can be any available, large outdoor area (ideally 1-25 acres in size, with fencing or other security provisions) with sufficient area to temporarily park vehicles, equipment, and personnel that are ready for deployment to the affected area to aid in the debris management operation. (Vehicles and equipment might include dump trucks, front-end loaders, bulldozers, cargo trucks, bucket trucks, chain saws, etc.) Staging Areas should have adequate parking spaces for a large number of workers at any time, and (ideally) covered space (e.g., permanent building, tent) to shelter workers and equipment from the weather and provide a measure of security. Staging Areas should also have provisions in place for temporarily lodging, feeding, and caring for workers and for addressing their basic sanitation concerns (i.e., port-a-johns, portable showers, and hand washing facilities). Either a permanent building, tent space on the grounds, or a combination of both may meet the lodging requirements. (An alternative is to provide shuttle service for workers to and from local motels and hotels, or a nearby Base / Camp set up to provide for the lodging, food, water, and sanitation needs of personnel. See description below.) Possible locations for use as Staging Areas include vacant commercial lots, nongovernmental organization warehouse facilities, governmental warehouse facilities, armories, county fairgrounds, highway / public works maintenance garages, airports, parks and recreation areas, or possibly shopping center parking lots (providing there is expressed written permission from the owner).

Base / Camps. The incident Base is the location where primary logistics functions are coordinated and administered and equipment / personnel support operations are conducted. This includes equipment maintenance repair, reorder and procurement activities, as well as other support services such as supply, medical, food / water, overnight lodging, sanitation, and communications. The affected local jurisdiction will establish and operate the incident Base. The Base will be designed to support operations at multiple incident sites (if possible). Support may be requested from the State (via the MSP/EMHSD) if local resources are not sufficient to operate the Base. This may include a request for the State to assist in establishing and operating Camps as a way of supplementing the capabilities and/or capacity of the Base.

Camps may be established if additional support locations are required due to incident size (geographically) or complexity. Camps are temporary locations within the general incident area which are equipped and staffed to provide food, water, sleeping areas, and sanitation services for workers that are currently not on call for deployment. Camps may be used in those situations where overnight / multi-day accommodations are required for volunteers, work crews, equipment operators, and other deployed resources under the disaster debris management operation that cannot be adequately (or efficiently) handled at the incident Base. Camps may be utilized, at the discretion of the affected local jurisdiction and the MSP/EMHSD, in lieu of local hotel / motel or other accommodations. Camps are particularly suited for certain situations, such as when:

- There is a shortage of nearby hotel / motel rooms or other suitable accommodations for deployed resources.

- Large numbers of resources have been deployed from outside the incident area (e.g., EMAC resources).
- The incident area is particularly large or widely dispersed.

Possible facilities for use as the Base / Camps include county fairgrounds, state / local parks and recreation areas, local campgrounds, military bases, college campuses, school grounds (if tents are used), community centers or community recreation centers, etc. Ideally, using the facility as a Base / Camp will not greatly interfere with its normal, day-to-day use. Staffing of the Base / Camps will be handled through local and state agencies and nongovernmental organizations. In most cases, nongovernmental relief organizations will be relied upon to assist in meeting the material and supply needs of the Base / Camp operations. This includes the provision of food and water, bedding, and basic sanitation services. FEMA may be able to provide advice and technical assistance in the establishment and operation of the Base / Camps.

Temporary Debris Storage and Reduction Sites. These are strategically located local sites at which debris is temporarily stored and reduced in volume for eventual permanent disposal via land filling or recycling. Reduction methods may include burning, grinding / chipping / shredding, compacting, and recycling. The number of sites designated at Temporary Debris Storage and Reduction (TDSR) Sites will be dependent on the disaster conditions and the nature and volume of debris to be stored, reduced, and disposed of. Although these sites are the responsibility of the affected local jurisdiction(s), the State (MSP/EMHSD) may be requested to provide technical advice and assistance in the establishment and operation of the sites. If the jurisdiction has a viable debris management plan, the TDSR Sites will likely be pre-identified. In those cases, the jurisdiction would normally select the site(s) most strategically located to the damaged areas (to minimize unnecessary transport of debris). If the jurisdiction does not have a viable debris management plan, then the sites will have to be selected by the local jurisdiction, and the MSP/EMHSD may or may not have an advisory role in that decision making process. The following general site evaluation considerations should be considered in identifying potential TDSR Sites:

- An interdisciplinary approach should be used to avoid potential problems and to consider all relevant factors.
- If possible, public land should be used to avoid potentially costly leases.
- If viable public sites are not available, private land can be used – but only if a lease is developed that clearly prescribes all use conditions and close-out procedures and timetables. If applicable, the lease should have provisions for temporary waivers regarding normal site use.
- The jurisdiction should provide for legal review of leases to avoid extensive close-out claims by the landowner.
- The jurisdiction should determine if any permits are required by local, state, and/or federal agencies for use of the site, and the steps that must be taken (and by whom) to obtain those permits in a timely manner.
- When locating sites, consider the potential impacts of noise, traffic, and environmental degradation, as well as pre-existing site conditions.
- Avoid environmentally sensitive areas such as wetlands, rare / critical animal and/or plant species, well fields and surface water supplies, and historical or archaeological significant sites.
- The site(s) must have good ingress and egress. (Consider traffic control measures at the site if necessary.)
- It is desirable to have sites in all parts of the jurisdiction, especially near potentially-high debris generators.
- Sites should generally be between 50-200 acres in size. (Larger sites mean fewer sites and easier site close-out.)
- When evaluating sites, consider the impact of the local recycling environment (e.g., timber agreements, mulch and chip disposal in the agricultural community, fuel sources for incinerators or heating, etc.).
- Consider special concerns in site selection (e.g., smoke from burning operations; round-the-clock noise, dust and traffic; locations of residential areas, schools, churches, hospitals, and other sensitive areas; etc.).
- Consider the locations of sites in relation to landfills and recycling centers that will be used for permanent disposal. (Also, consider the capacities and logistical capabilities of existing landfills.)

Although there is not a standard “model” for a TDSR Site, the following operational guidelines should be considered when designing the layout and operational plans for each site:

- Site topography and soil / substrate conditions will dictate the most appropriate site layout.
- THINK SITE RESTORATION AND ENVIRONMENTAL COMPLIANCE RIGHT FROM THE START to avoid problems at site close-out.
- Holding areas for ash, household hazardous waste, fuels, generators and mobile lighting plants should be lined with plastic to avoid potential environmental contamination.

- The site operational plan should have provisions for immediate fuel and hydraulic spill cleanup (equipment usage must be monitored).
- The site should have sufficient buffer zones between storage, transportation / unloading, and volume reduction areas, as well as with surrounding land uses.
- Debris should be segregated based on volume reduction methods (i.e., burning, chipping / grinding / shredding, compacting, and recycling).
- The site should be viewed as a multi-stage operation with continuous volume reduction.
- BEFORE activities begin at the site, a baseline report should be developed to include: 1) a video tape and/or photograph of the site; 2) documentation of important physical features; 3) random soil and water samples; 4) a sketch of the site operation layout; 5) documentation of potentially problematic operations; and 6) a plan for environmental remediation actions.

Once the TDSR Site(s) have begun operations, progressive updates should be developed by the officials in charge of the site. Ideally, this operational monitoring should include:

- A groundwater monitoring / sampling process (as appropriate).
- Spot soil samples at potentially problematic storage areas (ash, household hazardous waste, fuel).
- Periodic video tape and/or photographs of site operations.
- Documentation of public information dissemination regarding site operations.
- Reports of fuel spills / cleanup, hazardous waste storage and disposal, etc.

Refer to the Attachment titled “Temporary Debris Storage and Reduction Sites” for additional detailed information on the operation of the TDSR Sites (including a diagram of an “ideal” TSDR Site).

Landfills and Resource Recovery Facilities. The location(s) of sanitary landfills within each affected jurisdiction is contained in the local (County or Municipal) Solid Waste Management Plan. These landfills will be used to dispose of disaster-related debris once it has been reduced in volume at TDSR Sites and/or reasonable recycling opportunities have been explored. The MSP/EMHSD will work with the affected jurisdiction(s) as well as the Michigan Department of Environmental Quality (MDEQ) to monitor the disaster debris disposal operation from the outset. The MDEQ will provide ongoing technical assistance as required. (See “Debris Management Environmental Considerations” below.)

To the extent practicable, resource recovery facilities will be used to recycle some of the disaster-generated debris in order to reduce the amount of debris that has to eventually be disposed of in sanitary landfills. The locations of these facilities will be identified in local disaster debris management plans. In addition, the MDEQ can assist in identifying appropriate facilities in or near the affected area.

Satellite Disaster Debris Management Office(s). Depending on the disaster circumstances, it may be necessary for the MSP/EMHSD to establish one or more Satellite Debris Management Offices to maintain effective and efficient delivery of services to, and coordination of, debris management forces operating in the affected areas. This approach would be particularly suited to widespread disasters where multiple jurisdictions may have been severely affected. These Satellite Debris Management Offices would mirror the State Disaster Debris Management Center in terms of purpose, layout, staffing, etc., but would be concerned only with the debris management operations that are occurring within their designated operational area. In most cases, the Satellite Debris Management Offices would be located within or in close proximity to the Local Disaster Debris Management Centers. In some cases, however, it may be necessary for the Satellite Debris Management Offices to be located at separate facilities with appropriate communications links established with the State Disaster Debris Management Center and applicable Local Disaster Debris Management Centers. The MSP/EMHSD is responsible for the establishment and operation of all Satellite Debris Management Offices, in accordance with the Public Works and Engineering ESF in the Michigan Emergency Management Plan (MEMP).

Joint Field Office / Federal Disaster Debris Management Center. If an incident results in a major disaster or emergency declaration under the federal Stafford Act, the federal government (FEMA) will establish a debris management presence in the JFO if there are debris management issues that require federal assistance – either through direct assistance by a federal agency (e.g., Army Corps of Engineers and/or through activation of the Public Assistance Grant Program for assistance under Category A [Debris Removal and Disposal] or B [Emergency Protective Measures]). If this occurs, the MSP/EMHSD and/or another designated state agency (e.g., MDOT) will provide appropriate liaison to that facility to coordinate activities and to maximize the efficiency and effectiveness of the delivery of debris management assistance to the affected local jurisdictions and state agencies.

Refer to the MEMP Direction and Control ESF for information on JFO operations and federal / state coordination mechanisms within the JFO.

Debris Management Contracts. The Attachment titled "Debris Management Contract Considerations" provides background information on the four basic types of contracts that may be entered into with private contractors for debris management tasks. In addition, the Attachment titled "Sample Debris Management Contracts" provides contract templates (prepared by the U.S. Army Corps of Engineers) that can be modified and used in debris management operations. Refer to those two Attachments for more specific information.

Debris Management Environmental Considerations. The Attachment titled "Disposal of Disaster Debris" provides background information on Michigan laws and regulations related to the disposal of solid and hazardous waste (including the mass disposal of dead animals). These laws and regulations MUST be followed during disaster debris management operations – whether managed locally or by the State of Michigan. The Michigan Department of Environmental Quality (MDEQ) must be included in decision making processes throughout the debris management operation – from start to finish. If the incident involves the mass disposal of dead animals, the Michigan Department of Agriculture (MDA) and/or Michigan Department of Natural Resources (MDNR) must also be involved. The MDEQ, MDA, and MDNR are all members of the State Disaster Debris Management Team and should be activated / consulted as appropriate for ALL debris management operations. Refer to the Attachment for more specific information.

Note: Federal agencies that provide assistance under the Stafford Act (as described in the following section) are required to comply with Michigan laws and regulations related to disaster debris disposal. These agencies will consult with the MDEQ (and MDA and/or MDNR in the case of mass disposal of dead animals) throughout the debris management operation to ensure such compliance.

Debris Management in Presidentially-Declared Incidents. Disasters that result in a major disaster or emergency declaration under the federal Stafford Act are the most likely situations to generate large quantities of debris. Federal assistance with debris management activities can be provided: 1) through direct assistance provided by a federal agency such as the U.S. Army Corps of Engineers (via mission assignment under the National Response Framework or the agency's own enabling legislation); 2) through debris management technical assistance by FEMA; or 3) through the federal Public Assistance Grant Program (PAGP) under Categories A (Debris Removal and Disposal) or B (Emergency Protective Measures). Most, but not all, federally-declared disasters in Michigan result in the activation of the PAGP to provide immediate relief and assistance to communities and eligible private non-profit organizations that incur disaster-related damage to public facilities, infrastructure, and essential services.

These forms of assistance must be specifically requested in the Governor's declaration request letter. All such assistance provided by the federal government is coordinated through the SEOC by the MSP/EMHSD and other involved state agencies. However, during federally-declared incidents that involve extensive and potentially long-term debris clearance and removal operations, the debris management function may be merged (at the discretion of the MSP/EMHSD and FEMA) with the FEMA PAGP element. In those cases, the debris management function may shift primarily to the established Joint Field Office (JFO).

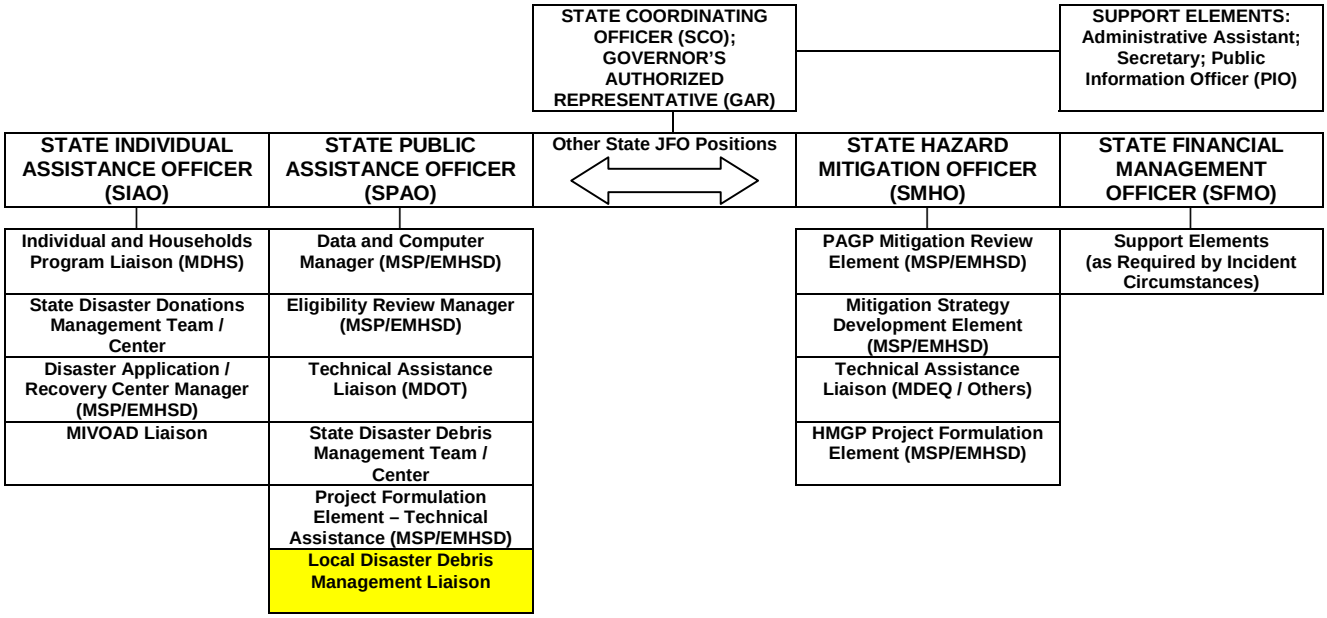
Activation of the FEMA PAGP element for debris clearance and removal can make available a wide variety of federal, nongovernmental organization, and private sector assets to assist in debris management, including facilities, communications infrastructure, equipment, personnel, technical expertise, and enhanced emergency contracting capabilities. In accordance with ESF #3 – the Public Works and Engineering Annex to the National Response Framework, the federal role in debris operations is to assist in "managing, monitoring, and/or providing technical advice in the clearance, removal, and disposal of contaminated and uncontaminated debris from public property and the reestablishment of ground and water routes into impacted areas…" Federal support is coordinated by FEMA (as the primary agency for assistance under the PAGP) and the U.S. Army Corps of Engineers (as the primary agency for technical assistance, engineering, and construction management resources during response activities). In addition to these two agencies, federal debris management assistance may also be provided by a number of other federal support agencies under ESF #3, including:

- Department of Agriculture (USDA) – assists in emergency removal of debris;
- Department of Energy (DOE) – assists in radiologically contaminated debris management activities;
- Department of Health and Human Services (HHS) – assists in contaminated debris management activities;

- Department of Homeland Security / U.S. Coast Guard (DHS/USCG) – assists in the removal of debris / contaminated debris and other obstructions that impact navigable waters;
- Department of the Interior (DOI) – assists in debris clearance monitoring;
- Department of Labor (DOL) – provides worker safety advice, assistance, and policy support for debris removal;
- Department of Transportation (DOT) – provides engineering personnel and support to assist in debris clearing;
- Environmental Protection Agency (EPA) – assists in locating disposal sites for debris clearance activities, and assists in contaminated debris management activities;
- General Services Administration (GSA) – assists in debris clearance monitoring;
- Nuclear Regulatory Commission (NRC) – assists in radiologically contaminated debris management activities;
- Tennessee Valley Authority (TVA) – assists in debris clearance monitoring.

Joint Field Office Organization. The MEMP ("Emergency Management System" section and Direction and Control ESF) prescribes the formation of a disaster organizational structure in the JFO aimed at fully utilizing the federal disaster assistance provided by the Stafford Act. This organizational structure is depicted in Figure 1 on the following page:

FIGURE 1: TYPICAL JOINT FIELD OFFICE (JFO) ORGANIZATIONAL STRUCTURE FOR STATE STAFF



Most of these positions are not directly related to debris management, but rather to other assistance programs. The only position in this basic organizational structure that is debris management-specific is that of State Public Assistance Officer (SPAO). The PIO, Administrative Assistants, and clerical staff will be involved in debris management, but in a support capacity. (They have other disaster-related duties to perform for other program areas.) The State Coordinating Officer (SCO) works to ensure that the disaster response and recovery effort is proceeding forward and that all necessary resources and mobilized and operational. The State Financial Management Officer (SFMO) is responsible for tracking and compiling costs associated with the debris management operation (and other disaster operations as well).

As indicated previously, during federally-declared incidents that involve extensive and potentially long-term debris clearance and removal operations, the debris management function may be merged (at the discretion of the MSP/EMHSD and FEMA) with the FEMA PAGP element at the established JFO. Relocation of the State Disaster Debris Management Team and Center to the JFO, coupled with the federal support dedicated to debris management, will provide sufficient staffing to adequately address the debris management function in incidents that involve extensive and potentially long-term debris clearance and removal operations.

Weapons of Mass Destruction Attacks – Special Considerations. In the event of a debris-generating incident involving potential biological or WMD contamination, the State Disaster Debris Management Team will work closely with FEMA and other involved parties (i.e., through the EMAC or the private sector) and staff at the various support facilities to ensure that the disaster debris is not contaminated by checking its place of origin and route of transport. These checks will be made at Collection Centers and/or TDSR Sites. Debris that is potentially contaminated will not be processed until verification can be made that it is free of contamination. Any technical expertise required to make that determination (i.e., through sampling / testing) will be arranged through the SEOC and/or JFO.

Emergency Communications Plan. The State Debris Manager and State Disaster Debris Management Team will work with the Local Debris Manager(s), involved state and local agencies, nongovernmental organizations, contractors, FEMA and other mission-assigned federal agencies to develop an incident-specific emergency communications plan for work crews involved in the debris management operation. At a minimum, this plan will address the following issues and considerations:

- The type(s) of communications methods that will be used in the operation, and for what purposes;
- Communications equipment assigned to work crews;
- Frequencies, channels, and use protocols for 800 MHz radio communications;
- Repair or replacement of damaged, inoperable, missing or stolen communications equipment; and
- Reporting formats, times, and intervals for status updates and coordination calls, as appropriate;

If possible, standard Incident Command System reports found in the E Team information management system will be used to record part of this information – specifically reports ICS 205-OS (Incident Radio Communications Plan) and ICS 205a-OS (Communications List). The remainder of the plan will be in narrative and/or tabular format. The completed plan will be posted on the E Team system as a Reference Document and be available to all involved parties at any time.

Health and Safety Plan. The State Debris Manager and State Disaster Debris Management Team will work with the Local Debris Manager(s), involved state and local agencies, nongovernmental organizations, contractors, FEMA and other mission-assigned federal agencies to develop an incident-specific health and safety plan for work crews involved in the debris management operation. Although local jurisdictions are primarily responsible for the development of the plan for operations that will occur within their jurisdictional boundaries, the State will provide technical assistance to ensure that all relevant concerns are addressed. The ultimate purpose of the plan is to help work crews avoid accidents during debris operations and to protect workers from exposure to hazardous materials. At a minimum, this plan will address the following issues and considerations:

- Methods for disseminating safety information to all workers involved in debris management operations;
- Minimum safety standards that are to be followed at all times;
- Monitoring procedures to ensure compliance with the minimum safety standards;
- Corrective actions for incidents of non-compliance with the minimum safety standards;
- Known hazards / potential hazards at all debris management sites;
- Safe use of / safe presence around heavy equipment used at debris management sites;
- Safe handling of potentially hazardous debris / materials;
- Proper use of personal protective equipment; and
- How to identify and report hazardous / potentially hazardous conditions (process to be followed and person to report to at each site).

If possible, standard Incident Command System reports found in the E Team information management system will be used to record part of this information – specifically report ICS 206-OS (Medical Plan). The remainder of the plan will be in narrative and/or tabular format. The completed plan will be posted on the E Team information system as a Reference Document and be available to all involved parties at any time.

Public Information Plan. The State Public Information Officer (SPIO) will work with the PIOs from all involved agencies and organizations to develop an incident-specific public information plan for the debris management operation. The plan will include the parameters, rules, and guidelines for the debris management operation so that affected residents can begin their personal recovery activities. The plan will also help to quell rumors and misinformation and ensure that the debris management operation runs as smoothly as possible. At a minimum, this plan will address the following issues and considerations:

- The method(s) that will be used to collect debris (curbside and/or Collection Centers);

- Specifics regarding dates, hours, locations, routes, etc. for pickup and/or drop off, allowable types and quantities of debris, segregation requirements for debris, household hazardous waste considerations, etc.;
- Specifics regarding the debris management facilities that will be in use in the jurisdiction (e.g., types, their dates and hours of operation, debris transport routes, what the public should expect regarding dust, noise, after-dark operations and other potential issues of concern, etc.);
- Multi-lingual (non-English) requirements for the affected population(s);
- The methods that will be used to disseminate the information (e.g., electronic and print media, internet sites, public forums, direct mail / direct distribution, billboards, flyers within billings, door-to-door campaigns, special needs advocacy organizations, etc.); and
- Where public concerns, complaints, and questions can be directed (e.g., Debris Information Center, web site, specific governmental office, etc.).

The completed plan (in narrative and/or tabular format) will be posted on the E Team system as a Reference Document and be available to debris management officials at any time. Refer to the task assignment lists for the SPIO and local PIO, as well as the Attachments titled "Sample Public Information Materials – Debris Clearance, Collection, and Sorting" for additional information and resources.

Record Keeping. Accurate and timely record keeping helps ensure that: 1) eligible costs are documented for possible reimbursement by the federal government; 2) information is readily available for incident reporting purposes; and 3) information is available to validate activities and operations as part of a state and/or federal audit or other program or financial review. To the extent possible, the State Disaster Debris Management Team will use standard reporting forms developed by FEMA (for record keeping purposes under the PAGP) to document debris management costs and operational information. Refer to the Attachment titled "Debris Management Record Keeping" for a list of forms that will be used.

Debris Monitoring. Debris monitoring will be required if private contractors are used in the debris management operation. There are two basic purposes of debris monitoring: 1) to verify that work completed by the contractor is within the contract scope of work; and 2) to provide the required documentation for federal PAGP grant reimbursement. The primary role for Debris Monitors is to document the location and amount of debris collected. Debris Monitors are concerned with documenting debris at three stages: 1) debris collected from Collection Centers and/or curbside; 2) debris accepted at TDSR Sites and/or final disposition (Landfills or Resource Recovery Centers); and 3) debris reduced / recycled at TDSR Sites and taken to final disposition. Debris Monitors are also concerned with documenting any operational or safety issues that might arise.

Debris Monitors for established facilities (i.e., Collection Centers, TDSR Sites, Landfills, Resource Recovery Centers) and "roving" monitor positions (i.e., assigned to monitor debris clearance and removal activities of private contractors working in the field) will be provided by the affected local jurisdiction, as specified in its disaster debris management plan. If required, supplemental state support for debris monitoring can be provided through the State Disaster Debris Management Team. The specific agency / agencies or nongovernmental organization designated for monitoring duties will be determined based upon the nature of the incident and the required technical expertise.

In some cases, debris monitoring will also be required for local government force account labor. The State Disaster Debris Management Team will ultimately make the determination about the need for regular monitoring (by the State) of local force account labor. This determination will be based primarily on: 1) incident circumstances (e.g., nature, scope, magnitude, severity, and anticipated duration of the incident); 2) federal requirements (as specified by FEMA PAGP staff); and 3) the possibility that fraudulent reporting practices could occur.

A checklist of responsibilities for state Debris Monitoring Staff can be found on page 43. Debris monitors will use the debris monitoring forms found in the Attachment titled "Debris Management Record Keeping" to record their observations. The Attachment titled "Debris Monitoring Issues" provides additional information related to: 1) the load ticket system that will be used; 2) truck certification procedures; 3) fraud prevention; and 4) federal debris monitoring requirements.

Debris Removal from Private Property. Debris removal from private property will be a rare occurrence and limited **ONLY** to those situations where there is a clear danger (present / imminent / potential) to public health and/or safety. Examples include but are not limited to: 1) dangerously leaning / damaged trees or limbs over public rights-of-way or other public spaces; 2) partially or totally collapsed structures that could endanger the public; 3) debris that poses a clear and present fire danger; 4) debris that negatively impacts critical infrastructure and/or services; and 5) hazardous household waste (HHW) which if left unaddressed poses an imminent threat to public

health and/or safety. Debris that does not meet these (or similar) circumstances is the responsibility of individual property owners. Private debris brought to the roadway right-of-way and/or taken to established Collection Centers in accordance with published guidelines will be removed by designated debris management forces.

FEMA Recovery Policies 9523.4 and 9523.13 provide guidance regarding federal PAGP reimbursement for the removal of debris from private property. These Policies and other helpful guidance can be found in the Attachment titled "Debris Removal from Private Property Special Considerations." They will be adhered to, whenever possible, in the removal of debris from private property by designated debris management forces. Decisions regarding specific private property debris removal issues will be made by the State and Local Debris Managers if the situation cannot be handled by Debris Monitors in the field.

Post-Joint Field Office Operations. It is likely that most, if not all, of the debris clearance and removal activities will be completed prior to the JFO being closed. However, because of the long-term nature of the debris reduction and final disposal phases, it is likely that some of these activities will be ongoing after the JFO closure. In most cases, the State Disaster Debris Management Team and Center will be de-activated at the time of the JFO closure, if not before. (The decision on when to de-activate the Team / Center rests with the SEOC Incident Command, based on input from members of the Team and the affected local governments.) Any remaining debris management activities will be coordinated by the SPAO and/or other MSP/EMHSD personnel from their normal work locations.

Post-Incident Review / After Action Report. As appropriate, the MSP/EMHSD will conduct a post-incident review of debris management operations with the State Disaster Debris Management Team, and then develop a summary of the findings for inclusion in the incident after-action report.

Plan Review and Maintenance. The MSP/EMHSD will review this plan with the State Disaster Debris Management Team annually and develop / disseminate updated material as required.

Training. The MSP/EMHSD will provide debris management training to members of the State Disaster Debris Management Team and to local emergency management program jurisdictions on an annual basis. If circumstances allow, this training will be conducted before the start of the traditional spring and summer severe weather seasons in Michigan. The training may (at the discretion of the MSP/EMHSD) consist of classroom training, online training, video training, field training, or a combination of these methods. The training will review the essential elements of disaster debris management operations as addressed in this plan and in counterpart local jurisdiction debris management plans. It will also address current federal concepts, processes, procedures, and regulations related to Category A (Debris Removal and Disposal) and Category B (Emergency Protective Measures) work under the federal PAGP. The MSP/EMHSD will determine the content of the training module and its delivery method(s) based on current and/or anticipated state needs and federal requirements.

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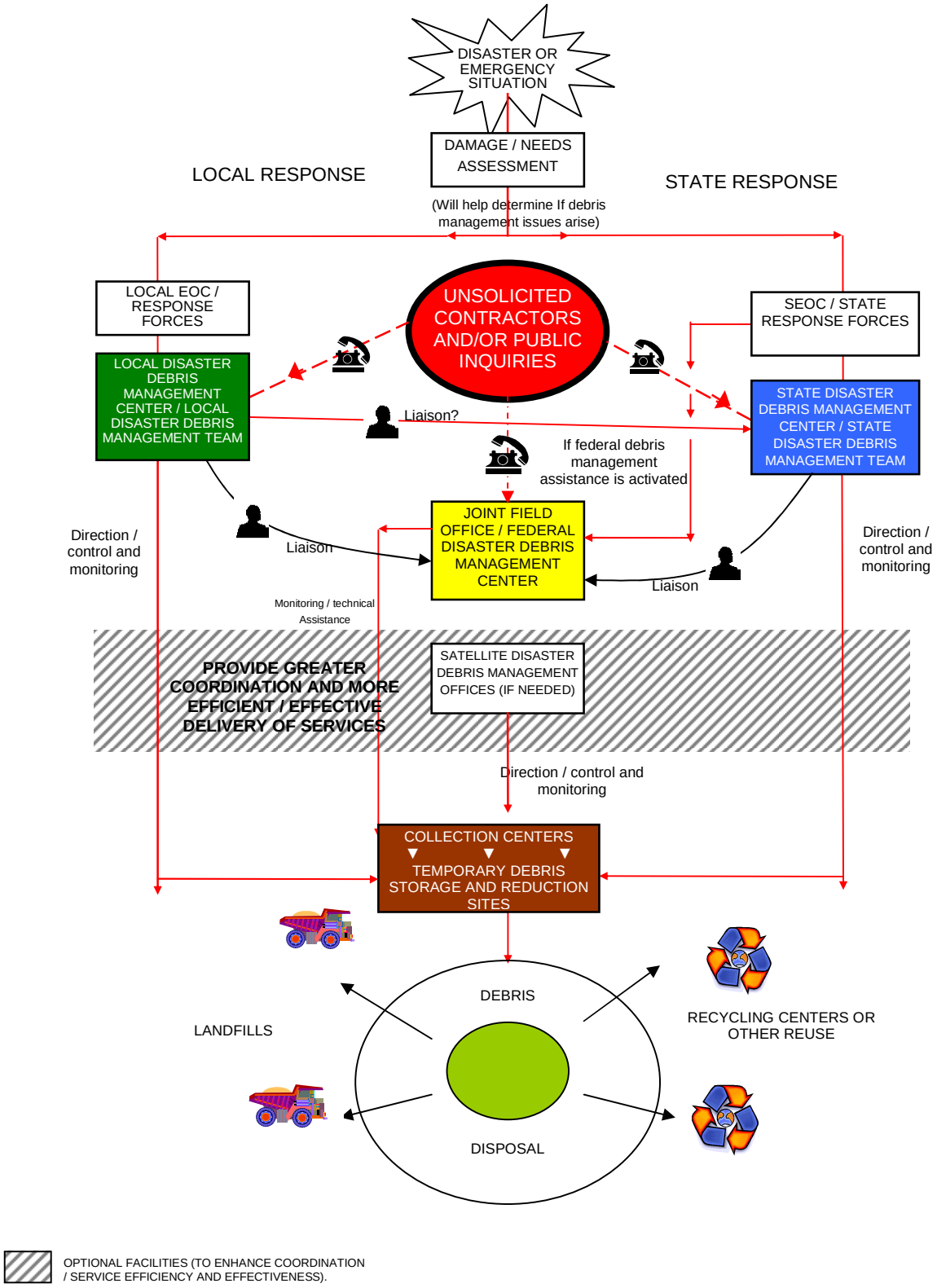
FIGURE 2: DISASTER DEBRIS MANAGEMENT PROCESS IN THE STATE OF MICHIGAN



TASKS AND EXECUTION:

Federal Roles and Responsibilities*. Federal activities are coordinated by FEMA, which will:

1. Make early contact with the U.S. Army Corps of Engineers (the primary agency for providing ESF #3 technical, engineering, and construction management assistance and support under the NRF) if direct debris removal assistance is required under the federal Stafford Act declaration.

2. If requested by the State, activate the Public Assistance Grant Program (PAGP) to provide for required assistance under Category A (Debris Removal and Disposal) and/or Category B (Emergency Protective Measures), as well as other categories of assistance as dictated by the needs and circumstances of the disaster. Provide a Federal Public Assistance Officer (FPAO) and support staff to coordinate the PAGP in conjunction with the designated State Public Assistance Officer (SPAO) and State Debris Manager (SDM).

3. Provide support and technical assistance to the State, especially regarding potentially hazardous / contaminated debris removal, large-scale / widespread debris management operations, debris in navigable waterways, and debris that is preventing / hampering critical facilities and/or the provision of critical services.

4. As appropriate, establish a debris management element at the Region V Regional Response Coordination Center (RRCC) to coordinate with the State.

5. (At the State Emergency Operations Center or other state facility, or the Joint Field Office), assist the designated State Debris Manager in:

   - Establishing the State Disaster Debris Management Team;
   - Establishing a State Disaster Debris Management Center;
   - Ensuring that appropriate debris management support facilities are established and operating effectively;
   - Ensuring compliance with environmental laws and regulations by working continuously with the MDEQ (and MDA and/or MDNR if mass disposal of dead animals is involved) throughout the operation;
   - Coordinating with Joint Information Center (JIC) staff on public service announcements, press releases, and other media-related support;
   - Coordinating with appropriate ESF #15 elements (i.e., congressional affairs, community relations, public affairs, etc.), the Defense Coordinating Officer, and other federal agencies, as necessary; and
   - Preparing input for situation / status reports, briefings, and VIP visits, as necessary.

6. Coordinate with other federal ESFs under the National Response Framework to provide vital debris management support services, including but not limited to:

   - Supplemental transportation and telecommunications assets and guidance;
   - Logistical support (to include, as necessary, technical assistance, supplies, services, equipment and facilities);
   - Coordination with private sector organizations for incident management support; and
   - Technical / operational assistance for hazardous / contaminated debris removal, processing, and disposal.

***Note: The Federal Government will only become involved subsequent to a Presidential major disaster or emergency declaration under the Stafford Act that includes 1) direct debris removal assistance by a federal agency, and/or 2) debris clearance and removal and/or emergency protective measures work under the Public Assistance Grant Program (PAGP), Categories A and B, respectively.**

State Roles and Responsibilities. The following state agency roles and responsibilities related to debris management are consistent with each agency's task assignments in the MEMP:

Emergency Management and Homeland Security Division, Department of State Police (MSP/EMHSD). The MSP/EMHSD coordinates state-level emergency management activities and provides overall direction and guidance to state disaster relief forces. In that role, the MSP/EMHSD is responsible for the following debris management-related tasks:

1. In accordance with the Information and Planning ESF in the MEMP, coordinate the collection, compilation, review, analysis, and verification of state and local damage assessment data, to include an assessment of the anticipated debris management needs of the communities affected by the disaster.

2. In accordance with the Direction and Control ESF in the MEMP, coordinate the establishment of the SEOC and other emergency coordination facilities necessary to effectively manage the disaster or emergency situation. (This includes the State Disaster Debris Management Center and other debris management support facilities such as Staging Areas, the Base / Camps, Satellite Debris Management Offices, and required local debris management facilities.) The MSP/EMHSD will coordinate all logistical needs related to state facility establishment and operation through the SEOC Logistics Section. The SEOC Logistics Section will take care of equipment and equipment installation needs, facility issues, food, water, medical needs, staffing issues and needs (in conjunction with appropriate state agencies), and other necessary resources.

3. Establish communications links with affected local jurisdictions (through the local EOC).

4. Mobilize state agency personnel to staff SEOC positions and provide direct assistance to affected local jurisdictions.

5. Request a Governor's disaster or emergency declaration (under Act 390, PA 1976, as amended), as required.

6. If circumstances warrant, activate the State Disaster Debris Management Team and State Disaster Debris Management Center as part of the SEOC structure. Activate members of the Team as appropriate for the situation.

7. Map the status of the debris management operation in a Geographic Information System (GIS) for use in reports and for display in the SEOC, the State Disaster Debris Management Center, the JFO, and other emergency coordination facilities as appropriate.

8. Request federal technical and disaster relief assistance as required.

9. As required, request additional volunteers through the Michigan Citizen Corps program and/or the Michigan Department of Human Services (MDHS) / Community Service Commission to supplement state, local, and nongovernmental labor forces involved in disaster debris management operations.

10. As appropriate, conduct a post-incident review of debris management operations and then develop a summary of the findings for inclusion in the incident After-action report.

11. Review this plan annually and update it as required. Provide updated copies to all State Disaster Debris Management Team members.

In addition to these general responsibilities, the following disaster positions with the MSP/EMHSD have specific debris management roles and responsibilities:

State Coordinating Officer (SCO). The Governor normally appoints the Commanding Officer of the MSP/EMHSD or another designated MSP/EMHSD staff person to serve as the State Coordinating Officer subsequent to a major disaster or emergency declaration under the federal Stafford Act. The SCO is in charge of all disaster planning, response, recovery and mitigation operations within this state. The SCO will work directly with the Federal Coordinating Officer (FCO), normally from FEMA, in the provision of all Individual, Public, and Hazard Mitigation Assistance provided under the federal declaration. (Debris management falls under the purview of the Public Assistance element of the President's Disaster Assistance Program.)

The SCO is responsible for appointing appropriate staff to serve in disaster positions, including appointment of a State Public Assistance Officer (SPAO) and necessary support staff for the provision of disaster assistance to affected communities. The SCO also keeps the Governor advised of all events and progress as the disaster unfolds and as recovery takes place. The status of debris management efforts is part of that progress report.

State Public Assistance Officer (SPAO). The SCO will appoint a person from within the MSP/EMHSD to serve as the State Public Assistance Officer. Specific responsibilities of the SPAO as they relate to debris management are as follows:

1. Assist the State Planner from the MSP/EMHSD in developing and revising this State Debris Management Plan – a support plan to the MEMP.

2. Identify and assist in training appropriate MSP/EMHSD and other state agency staff in state debris management operations as part of the State Disaster Debris Management Team within the SEOC and/or JFO structure.

3. Coordinate with the designated State Debris Manager (SDM) from the MSP/EMHSD, and the Federal Public Assistance Officer (FPAO) from FEMA, in the establishment and operation of the State Disaster Debris Management Team and State Disaster Debris Management Center.

4. Work with the State Disaster Debris Management Team and FEMA to ensure that the debris management function is being adequately addressed to meet the health and safety needs of the affected population as well as the operational needs of the recovery effort.

5. Advise the SCO and other appropriate officials on debris management issues throughout the disaster period.

6. Determine applicant, work, and cost eligibility for debris clearance and removal work under the PAGP (in coordination with the State Debris Manager, FPAO, and Local Debris Managers).

7. In the event of an incident that involves potential biological or WMD contamination, work with the State Disaster Debris Management Team and staff at the various support facilities (i.e., State Disaster Debris Management Center, Staging Areas, and local debris management facilities) to ensure that potentially hazardous / contaminated debris is dealt with in a safe and appropriate manner.

State Debris Manager (SDM). Specific responsibilities of the State Debris Manager are as follows:

1. Assist the State Planner from the MSP/EMHSD in developing and revising this State Debris Management Plan – a support plan to the MEMP.

2. Assist the SPAO in identifying and training appropriate MSP/EMHSD and other state agency staff in state debris management operations as part of the State Disaster Debris Management Team within the SEOC and/or JFO structure.

3. Coordinate with the SPAO from the MSP/EMHSD, and the FPAO from FEMA, in the establishment and operation of the State Disaster Debris Management Team and State Disaster Debris Management Center.

4. Work with the SPAO, FPAO, Local Debris Managers, and other debris management support staff in affected local jurisdictions to:

    - Assist in determining debris clearance and removal priorities;
    - Ensure compliance with environmental laws and regulations by working continuously with the MDEQ (and MDA and/or MDNR if mass disposal of dead animals is involved) throughout the operation;
    - Assist in establishing work schedules, a communications plan, and a health and safety plan for involved work crews;
    - Assist in determining applicant, work, and cost eligibility for debris clearance and removal work under the PAGP;
    - Assist in developing and implementing contracts with involved agencies and contractors in a manner consistent with federal, state, and local guidelines and requirements;
    - Assist in managing the flow of paperwork involved in the debris management operation;
    - Assist in reviewing and approving cost documentation for debris management related work;
    - Assist in supervising and coordinating work activities;
    - Address issues that may arise related to possible hazardous / contaminated debris in the event of an incident that involves potential biological or WMD contamination; and

- Ensure that all involved parties complete the required work on time and in accordance with local, state and federal regulations. (Determine final inspection responsibilities before the actual work begins.)

5. Establish any Satellite Debris Management Offices that may be required based on the needs of the debris management operation.

6. As necessary, coordinate with the SPAO, SEOC Incident Commander, State Disaster Debris Management Team, and other appropriate officials to identify and mobilize state agency staff to provide supplemental support to local efforts to manage and operate debris management facilities (i.e., Collection Centers, Staging Areas, Temporary Debris Storage and Reduction Sites, Local Disaster Debris Management Center).

7. Provide continuous, updated information on debris management efforts for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

State Public Information Officer (SPIO). In accordance with the Information and Planning ESF in the MEMP, the SPIO is the Governor's Press Secretary. This position is not debris management specific, but rather handles all aspects of media relations and press announcements related to a disaster or emergency. All public information related to debris management is released through the SPIO, on behalf of the Governor, and in conjunction with the State Disaster Debris Management Team, FEMA press officers, and the affected local jurisdictions.

Note: Normally, the SPIO will delegate public information responsibilities related to disasters and emergencies to the MSP/EMHSD Public Information Officer, who will act on the SPIO's behalf.)

1. Develop and maintain pre-scripted (in English and appropriate non-English languages) press releases and public service announcements pertaining to debris management, for inclusion in this plan. (Refer to the Attachments.)

2. Work with the PIOs from all involved agencies and organizations to develop an incident-specific public information plan for the debris management operation.

3. Coordinate the development and release of all information related to debris management, in conjunction with the affected local jurisdictions, the State Disaster Debris Management Team, FEMA and/or the U.S. Army Corps of Engineers (USACE), and the State Joint Public Information Team (JPIT).

4. Serve as the primary state point of contact for the media on all matters pertaining to debris management.

5. Work with appropriate MSP/EMHSD and state agency staff to post pertinent debris management information on the MSP/EMHSD and/or State of Michigan web sites, and provide linkages to other sites as appropriate.

MSP/EMHSD District Coordinator (for affected area). The primary responsibilities for the MSP/EMHSD District Coordinator (for the affected area) as they relate to disaster debris management are as follows:

1. Assist in identifying local disaster debris management needs and issues. Ensure this information is adequately communicated to the MSP/EMHSD and SEOC in a timely manner via the damage / needs assessment process and other appropriate means.

2. Assist local officials in establishing and staffing necessary disaster debris management support facilities (i.e., Local Disaster Debris Management Centers, Collection Centers, Staging Areas, the Base / Camps, and TDSR Sites).

3. Assist local officials with disaster debris related public information activities, as required.

4. Assist in resolving any problems that may occur with regard to the management of disaster debris within the affected area.

5. Ensure that all relevant disaster debris management information is reported to the SEOC in a timely manner for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

SEOC Incident Management Section Chief. Specific responsibilities of the SEOC Incident Management Section Chief (Incident Commander) from the MSP/EMHSD as they relate to disaster debris management are as follows:

1. Serve as SCO for the incident, or designate a staff person of sufficient authority from within the MSP/EMHSD to serve in that capacity. (The SCO must appoint staff from within the MSP/EMHSD to serve in several key disaster positions, including SPAO and State Debris Manager.)

2. Work with the SEOC Planning Section Chief to ensure that an adequate and timely damage / needs assessment is conducted by the affected local jurisdictions and state agencies. This process will help in determining if there is a need for state-level involvement in the disaster debris management operation.

3. Work with the SEOC Operations Section Chief to ensure that the State Disaster Debris Management Team and Center are established and operational within an acceptable timeframe, and that appropriate coordination links have been established with the FEMA debris management element at the RRCC and/or JFO.

4. Work with the SEOC Planning Section Chief and other SEOC Section Chiefs in developing and continuously maintaining an Incident Action Plan (IAP) that outlines the strategic goals and objectives of the incident response and recovery effort. Disaster debris management operations should be an integral part of that IAP.

5. Provide overall direction and management of the incident response and recovery, including the disaster debris management operation.

SEOC Operations Section Chief. Specific responsibilities of the SEOC Operations Section Chief from the MSP/EMHSD as they relate to disaster debris management are as follows:

1. Work with the SEOC Incident Management Section Chief (Incident Commander) to establish a Debris Management Branch within the SEOC Operations Section. The State Disaster Debris Management Team and Center will operate under this framework.

2. Monitor the State Disaster Debris Management Team and Center to ensure that disaster debris management operations are timely and appropriate for the incident circumstances and are adequately meeting the needs of the affected population and the response / recovery effort.

3. Ensure that the Debris Management Branch, Field Operations Branch, and Staging Branch are all adequately coordinating activities related to disaster debris management operations.

4. Ensure that the Debris Management Branch / State Disaster Debris Management Team and Center are providing the SEOC Planning Section with continuous, updated operational information for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

SEOC Operations Section / Field Operations Branch. Specific responsibilities of the SEOC Operations Section / Field Operations Branch Director (from the MSP/EMHSD) as they relate to disaster debris management are as follows:

1. Work with the MSP/EMHSD District Coordinator for the affected area to identify local jurisdictions in need of disaster debris management assistance. Ensure this information is adequately communicated to the SEOC Planning Section for compilation, analysis, reporting, and operational decision making by key SEOC staff.

2. Work with the MSP/EMHSD District Coordinator for the affected area and the State Disaster Debris Management Team and Center to establish and staff necessary disaster debris management support facilities (i.e., Local Disaster Debris Management Centers, Collection Centers, Staging Areas, the Base / Camps, TDSR Sites, Satellite Disaster Debris Management Offices, and JFO).

3. Coordinate disaster debris management field activities with the Debris Management Branch and Staging Branch.

4. Provide the SEOC Planning Section with continuous, updated operational information for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

SEOC Operations Section / Staging Branch. Specific responsibilities of the SEOC Operations Section / Staging Branch Director (from the MSP/EMHSD or USB/MSP) as they relate to disaster debris management are as follows:

1. Work with the MSP/EMHSD District Coordinator for the affected area and the State Disaster Debris Management Team and Center to establish and staff necessary disaster debris management support facilities (i.e., Collection Centers, Staging Areas, the Base / Camps, and TDSR Sites).

2. Coordinate disaster debris management field activities with the Debris Management Branch and Field Operations Branch.

3. Provide the SEOC Planning Section with continuous, updated operational information for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

SEOC Logistics Section Chief. Specific responsibilities of the SEOC Logistics Section Chief (from the MSP/EMHSD) as they relate to disaster debris management are as follows:

1. As required by the operational needs of the incident, establish and equip the SEOC and other necessary emergency coordination facilities. This includes the State Disaster Debris Management Center (as part of the Debris Management Branch within the SEOC Operations Section) as well as any required debris management support facilities (i.e., Collection Centers, Staging Areas, the Base / Camps, TDSR Sites, Satellite Disaster Debris Management Offices, and JFO).

2. Work with the various SEOC Section Chiefs to determine the short- and long-term operational needs of the SEOC and other activated emergency coordination facilities, and whether or not supplemental disaster commodities will be required to sustain those operations. Communicate these findings to the SEOC Incident Management Section Chief in a timely manner for appropriate follow up decision making.

3. Provide the SEOC Planning Section with continuous, updated operational information for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

4. Provide staff to aid in cleaning up and restoring facilities / sites used in disaster debris management operations.

SEOC Planning Section Chief. Specific responsibilities of the SEOC Planning Section Chief (from the MSP/EMHSD) as they relate to disaster debris management are as follows:

1. Work with affected local jurisdictions and state agencies to conduct an adequate and timely damage / needs assessment for the incident. This process will help in determining if there is a need for state involvement in disaster debris management operations.

2. Assist the SEOC Incident Management Section Chief and other SEOC Section Chiefs in developing and continuously maintaining an Incident Action Plan (IAP) that outlines the strategic goals and objectives of the incident response and recovery effort. Disaster debris management operations should be an integral part of that IAP.

3. Collect, compile, synthesize, analyze, and continuously update information about the disaster debris management operation (and other aspects of the incident). Use this information to develop disaster situation / status reports, press releases (if assistance is requested by the SPIO), and the disaster after-action report.

4. Work with the SEOC GIS staff to develop and continuously update maps and other displays that show the status of the disaster debris management operations. Use these in reports and for display in the SEOC, the State Disaster Debris Management Center, the JFO, and other emergency coordination facilities as appropriate.

5. As required, establish and staff a Resource Unit within the SEOC Planning Section to monitor and track the availability and usage of resources in the incident response / recovery – including any debris management resources that are made available through FEMA and/or other states and nongovernmental organizations. (The E Team “Critical Assets” report can be used for this purpose.)

SEOC Planning Section / Resource Unit. Specific responsibilities of the SEOC Planning Section / Resource Unit as it relates to disaster debris management are as follows:

1. At the direction of the SEOC Planning Section Chief, monitor and track the availability and usage of resources in the incident response / recovery – including any debris management resources that are made available through FEMA and/or other states and nongovernmental organizations. (The E Team "Critical Assets" report can be used for this purpose.)

2. Periodically compile this information (in a format determined by the SEOC Planning Section Chief) and make it available for use in disaster situation / status reports, press releases (if requested by the SPIO), and the disaster after-action report.

SEOC Geographic Information System (GIS) Specialist. Specific responsibilities of the SEOC GIS Specialist (from within the SEOC Logistics Section) as it relates to disaster debris management are as follows:

1. At the general direction of the SEOC Planning Section Chief and/or State Debris Manager, develop and continuously update maps and other displays with disaster debris management operational information for use in reports and for display in the SEOC, the State Disaster Debris Management Center, the JFO, and other emergency coordination facilities as appropriate.

2. Geo-locate (or obtain the geospatial coordinates for) all facilities used in the disaster debris management operation – including Local Disaster Debris Management Centers, Collection Centers, Staging Areas, the Base / Camps, TDSR Sites, Satellite Disaster Debris Management Offices, and the JFO.

State Disaster Debris Management Team. Depending on the disaster circumstances, the following state agencies may be called upon to serve as part of the State Disaster Debris Management Team in the SEOC and/or JFO. In accordance with the Michigan Emergency Management Plan (MEMP), these agencies will (if activated):

Michigan Department of Agriculture (MDA).

1. Assist in the analysis of state and local damage assessment data to determine the anticipated need for state participation in the debris management operation (i.e., due to a widespread plant or animal disease).

2. Coordinate agricultural crop and livestock debris disposal / management operations.

   Crops. The MDA will normally coordinate debris disposal / management operations that involve agricultural crops (field crops, nursery stock, fruit trees, etc.), working in conjunction with the affected farmers / agricultural enterprises, the USDA and MDEQ, MSU Extension and other agricultural agencies. Debris disposal / management operations that involve very large quantities of vegetation or more than one type of vegetation, or that require interaction and coordination with multiple agencies and levels of government, will normally be handled in conjunction with the MSP/EMHSD.

   Livestock. The MDA will be the lead coordinating agency for livestock debris disposal / management operations, working in conjunction with the affected farmers / agricultural enterprises, the USDA, MSU Extension, the MDEQ and MDCH, and other appropriate agencies. Livestock disposal / management operations that involve a very large number of livestock will normally be handled in conjunction with the MSP/EMHSD.

3. As appropriate, provide information on MDA debris management issues and efforts for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

Michigan Department of Corrections (MDC).

1. Provide personnel (inmate work crews), supervisors (guards), and vehicles (if available) to support state and local debris management operations.

2. As appropriate, provide information on MDC debris management issues and efforts for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

Michigan Department of Environmental Quality (MDEQ).

1. Minimize environmental contamination from disaster debris by providing technical assistance to the MSP/EMHSD, the State Disaster Debris Management Team, involved federal agencies and nongovernmental organizations, and the affected local jurisdictions regarding proper debris reduction, storage, and disposal methods in accordance with established laws and regulations.

2. Expedite required environmental permitting processes (to the extent possible) to accommodate post-incident debris management / clean up activities that pose a threat to public health and/or safety.

3. As appropriate, provide information on MDEQ debris management issues and efforts for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

Michigan Department of Management and Budget (MDMB).

1. Provide personnel (work crews), vehicles, and state facilities (as available and required) to support state and local debris management operations.

2. As required, provide technical assistance in emergency procurement procedures to facilitate / aid state and local debris management operations.

3. As appropriate, provide information on MDMB debris management issues and efforts for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

Michigan Department of Military and Veterans Affairs (MDMVA).

1. Provide personnel (work crews), vehicles, and MNG facilities (as available and required) to support state and local debris management operations.

2. As required, provide technical engineering expertise to aid state and local debris management operations.

3. As required, provide supplemental communications support to the debris management operations.

4. As appropriate, provide information on MDMVA debris management issues and efforts for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

All requests for MDMVA assistance will be processed in the normal manner via Governor's Executive Order / Proclamation, through the SEOC.

Michigan Department of Natural Resources (MDNR).

1. Assist in the analysis of state and local damage assessment data to determine the anticipated need for state participation in the debris management operation (i.e., due to a widespread plant or animal disease).

2. Provide personnel (work crews), vehicles, and MDNR facilities (as available and required) to support state and local debris management operations.

3. Coordinate forest and wildlife debris disposal / management operations.

   Trees. The MDNR will normally coordinate debris disposal / management operations that involve infested trees in state forest lands and adjacent lands, working in conjunction with the affected landowners, the USDA / Forest Service and MDEQ, MSU Extension and other appropriate agencies. Debris disposal / management operations that involve very large quantities of trees or more than one type of vegetation, or that require interaction and coordination with multiple agencies and levels of government, will normally be handled in conjunction with the MSP/EMHSD.

   Wildlife. The MDA will be the lead coordinating agency for wildlife debris disposal / management operations, working in conjunction with the affected landowners, the U.S. Fish and Wildlife Service, MSU Extension, hunting and fishing organizations (as appropriate), the MDEQ and MDCH, and other appropriate agencies.

Wildlife disposal / management operations that involve a very large number of animals will normally be handled in conjunction with the MSP/EMHSD.

4. As appropriate, provide information on MDNR debris management issues and efforts for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

Michigan Department of Transportation (MDOT).

1. Provide personnel (work crews), vehicles, and MDOT facilities (as available and required) to support state and local debris management operations.

2. As required, provide technical engineering expertise to aid state and local debris management operations.

3. As required, provide management contacts with affected local / county road agencies for the purpose of facilitating / coordinating debris management operations.

4. As required, issue permits for oversize and/or overweight vehicles that may be involved in the debris management operation.

5. As appropriate, provide information on MDOT debris management issues and efforts for inclusion in disaster situation / status reports, press releases, and the disaster after-action report.

Other State Support Agencies.

Although not a formal part of the State Disaster Debris Management Team, the following state agencies may be requested to provide support to other state agencies involved in the debris management operation (in accordance with task assignments outlined in the MEMP):

- **Michigan Department of Community Health** – As required, provide technical advice and assistance to agencies involved in animal debris disposal. (This may include issuing health advisories, in conjunction with local health departments and other affected state agencies, to inform the affected population about the nature of the disposal operations, the possible health risks associated with contacting dead / diseased animal carcasses, and the steps being taken to protect public health.)

- **Michigan Department of Human Services / Michigan Community Service Commission** – As requested, provide volunteers through the AmeriCorps and other programs to supplement state, local, and nongovernmental labor forces involved in debris management operations.

State support agencies will be mobilized as needed through their designated Emergency Management Coordinator. Support activities may take place in the SEOC, State Disaster Debris Management Center, JFO, or other debris management facilities.

Local Roles and Responsibilities. Local debris management activities are normally under the purview of the Local Debris Manager (LDM). Typically, that individual is a part of the Public Works / Engineering Group or Element within the local EOC structure. The Local Emergency Management Coordinator (LEMC) is responsible for the overall coordination and direction of the jurisdiction's emergency management activities. The LEMC also coordinates the operation of the EOC in time of disaster or emergency. These and other local agency roles and responsibilities related to debris management are outlined below:

Local Emergency Management Coordinator (LEMC). Specific responsibilities of the LEMC as they relate to debris management are as follows:

1. In accordance with the assessment guidance found in MSP/EMHSD Publication 201 – "Local Emergency Planning Workbook" and MSP/EMHSD Publication 901 – "Damage Assessment Handbook," coordinate the collection, compilation, review, analysis, and submittal of local damage assessment data to the MSP/EMHSD. (Part of that effort involves an assessment of the anticipated debris management needs of the local communities affected by the disaster.)

2. As appropriate, coordinate the establishment of the local EOC and other emergency coordination facilities necessary to effectively manage the disaster or emergency situation.

3. Establish communications links with the MSP/EMHSD and (if activated) the SEOC in Lansing, and with other local affected local communities.

4. Mobilize personnel to staff EOC positions and provide direct assistance to affected local areas.

5. As appropriate, declare a local "State of Emergency" and request (through the MSP/EMHSD) a Governor's disaster or emergency declaration to mobilize needed state assistance. If warranted, request federal disaster assistance through the MSP/EMHSD.

6. If circumstances warrant, activate the Local Disaster Debris Management Team and Local Disaster Debris Management Center as part of the EOC structure. Activate members of the Team as appropriate for the situation. (Once activated, the Local Disaster Debris Management Team / Center should immediately establish communications links with the State Disaster Debris Management Team / Center within the SEOC.)

7. Identify and secure approval for use of local facilities that may be needed in the debris management operation (i.e., Collection Centers, Staging Areas and TDSR Sites). Immediately communicate this information to the State Disaster Debris Management Team / SEOC and the MSP/EMHSD District Coordinator.

Local Debris Manager (LDM). Typically, the Local Debris Manager will be a representative of the Department of Public Works / Engineering, the Department of Solid Waste Management, or another similar agency. The Local Debris Manager is typically the head of the Local Disaster Debris Management Team (composed of appropriate local agency and nongovernmental organization personnel). The Local Disaster Debris Management Team is usually similar in composition and mission to the State Disaster Debris Management Team, but handles debris management at the local level. Specific responsibilities of the Local Debris Manager are as follows:

1. As required, assist the LEMC and other appropriate local officials in developing and revising the debris management portions of the Public Works and Engineering Annex (Section / ESF) of the jurisdiction's Emergency Operations Plan / Emergency Action Guidelines, in accordance with the guidance provided by the MSP/EMHSD (MSP/EMHSD Publication 201 and/or others) and this State Disaster Debris Management Plan (a support plan to the MEMP). (Note: The jurisdiction may have a separate, stand-alone support plan for disaster debris management, in lieu of an EOP/EAG Annex.)

2. Assist the LEMC in identifying and training appropriate local agency and nongovernmental organization staff in debris management operations as part of the Local Disaster Debris Management Team within the EOC and/or JFO structure.

3. Coordinate with the LEMC in the establishment and operation of the Local Disaster Debris Management Team and Local Disaster Debris Management Center to manage disaster debris operations (in conjunction with the MSP/EMHSD, and possibly FEMA, for widespread / severe events that are likely to generate large quantities of debris).

4. Coordinate with local nongovernmental (volunteer, community-based, and faith-based) organizations to participate in debris management operations as required.

5. Work with the SPAO, FPAO, State Debris Manager, Local Disaster Debris Management Team, and other debris management support staff in the jurisdiction to:

   - Assist in determining debris clearance and removal priorities;
   - Ensure compliance with environmental laws and regulations by working continuously with the MDEQ (and MDA and/or MDNR if mass disposal of dead animals is involved) throughout the operation;
   - Assist in establishing work schedules, a communications plan, and a health and safety plan for involved work crews;
   - Assist in developing and implementing contracts with involved agencies and contractors in a manner consistent with federal, state, and local guidelines and requirements;
   - Assist in managing the flow of paperwork involved in the debris management operation;
   - Assist in reviewing and approving cost documentation for debris management related work;

- Assist in supervising and coordinating work activities; and
- Ensure that all involved parties complete the required work on time and in accordance with local, state and federal regulations. (Determine final inspection responsibilities before the actual work begins.)

6. Provide continuous, updated information on debris management efforts for inclusion in damage assessment reports, disaster situation / status reports, press releases, and the disaster after-action report.

7. As required, provide regular reports to the Chief Elected Official, LEMC, other EOC staff, the MSP/EMHSD, FEMA, and other involved agencies and organizations, on the status of local debris management operations.

Local Public Information Officer (PIO). The Local PIO position is not debris management specific, but rather handles all aspects of media relations and press announcements related to a disaster or emergency. All public information related to debris management is released through the PIO, on behalf of the Chief Elected Official of the jurisdiction, and in conjunction with other involved local, state, and federal agencies and organizations.

1. Develop and maintain pre-scripted (in English and appropriate non-English languages) press releases, informational bulletins, handbills and door hangers, and public service announcements pertaining to debris management, for inclusion in this plan. (Refer to the Attachments.) These materials should address the following subjects:

   - Segregating hazardous waste;
   - Placing debris at the curbside;
   - Keeping debris piles away from fire hydrants and valves;
   - Reporting illegal dumping;
   - Segregating recyclable materials;
   - Debris pick-up schedules;
   - Location of Temporary Debris Storage and Reduction (TDSR) Sites;
   - Disposal methods and compliance with Environmental Protection Agency (EPA) / Michigan Department of Environmental Quality (MDEQ) / local regulations;
   - Restrictions and penalties for illegal dumping / dumps;
   - (As applicable) Locations where local residents can drop off debris (i.e., Collection Centers); and
   - (As applicable) Locations where local residents can pick up wood, wood chips, etc. for use at their home.

2. Work with the SPIO and the PIOs from all other involved agencies and organizations to develop an incident-specific public information plan for the debris management operation.

3. Coordinate the development and release of all information related to debris management, in conjunction with the Local and State Disaster Debris Management Teams, FEMA and/or the USACE, and the Local Joint Public Information Team (JPIT).

4. Serve as the primary local point of contact for the media on all matters pertaining to debris management.

5. Work with appropriate local agency staff to post pertinent debris management information on the jurisdiction's web sites, and provide linkages to other sites as appropriate.

Local EOC Operations Section. The EOC Operations Section works with the Department of Public Works, Department of Solid Waste Management, and contracted services to manage debris clearance, removal, and disposal activities. (Note: these agencies may have slightly different names in different jurisdictions, but the core functions will remain essentially the same.)

<u>Department of Public Works</u>:

1. Implement the local Debris Management Plan per the direction of the Local Debris Manager.

2. Deploy / track supplies, equipment, and personnel for debris management operations.

3. Estimate debris quantities (by type of debris) as part of the jurisdiction's damage / needs assessment effort (if possible).

4. Develop debris clearance and removal priorities – with emphasis on critical facilities and services. Coordinate activities with utility line clearing crews to maximize efficiency and reduce potential conflicts and safety concerns.

5. Develop strategies for debris storage, reduction, and disposal – making sure that all applicable environmental regulations are being complied with.

Department of Solid Waste Management:

1. Remove debris from public property.

2. Tranport debris to designated TDSR Sites.

3. Operate Collection Centers – if used (in conjunction with contracted debris services).

4. Operate TDSR Sites (in conjunction with contracted debris services) in accordance with generally accepted standards / practices and in full compliance with applicable environmental regulations.

5. Ensure that all debris is transported to the appropriate TDSR Sites or to a regulated waste facility.

Private Contractors:

1. Clear / remove debris from public / private property in accordance with locally-developed priorities.

2. Operate Collection Centers – if used (in conjunction with the Department of Solid Waste Management or other designated local agency).

3. Transport debris to designated TDSR Sites.

4. Operate TDSR Sites (in conjunction with the Department of Solid Waste Management or other designated local agency) in accordance with generally accepted standards / practices and in full compliance with applicable environmental regulations.

5. Ensure that all debris is transported to the appropriate TDSR Sites or to a regulated waste facility.

Local EOC Planning Section. The EOC Planning Section is responsible for collecting, compiling, and analyzing information about the incident, maintaining equipment logs, tracking the use of personnel, and providing information to the debris manager. The Planning Section manages the Engineering Department, Legal Department, and Environmental Compliance staff. (Note: these agencies may have slightly different names in different jurisdictions, but the core functions will remain essentially the same.)

Engineering Department:

1. Assist in conducting a debris assessment.

2. Develop cost estimates and scopes of work for public employees and contractors that are part of the debris management operation.

3. Evaluate options for recycling / reducing / disposing of debris.

4. Evaluate / select locations for Collection Centers (if used) and TDSR Sites (in conjunction with other members of the Local Disaster Debris Management Team).

Legal Department:

1. Develop and review all debris management contracts.

2. Secure all authorizations necessary for debris removal activities.

3. Ensure compliance with all federal, state, and local environmental, historical preservation and other applicable laws, regulations, and policies.

4. Review rights-of-entry and hold harmless agreements.

5. Review private property insurance information and other assets to ensure benefits and resources are fully utilized.

Environmental Compliance Staff:

1. Coordinate with applicable federal, state, and local agencies to ensure compliance with environmental, historic preservation and other applicable laws, regulations, and policies.

2. Determine environmental monitoring and reporting requirements for the designated TDSR Sites.

3. Maintain adequate documentation / records of environmental transactions for historical and compliance purposes.

Local EOC Logistics Section. The EOC Logistics Section is responsible for establishing and maintaining any facilities designated for debris management activities. This includes providing food, office supplies, communication devices, equipment, personnel, and any other necessary supplies. The Logistics Section provides administrative staff to coordinate these and other required functions.

Local EOC Finance / Grant Administration Section. The EOC Finance / Grant Administration Section is responsible for ensuring that funds are available for equipment, supplies, and all other expenses associated with the debris management operation. The Finance / Grant Administration Section manages the Contract and Procurement Department and Fiscal Administration staff. (Note: these agencies may have slightly different names in different jurisdictions, but the core functions will remain essentially the same.)

Contract and Procurement Department:

1. Set bidding requirements for debris management activities.

2. Develop forms.

3. Advertise for bids.

4. Instruct bidders.

5. Develop contracts.

6. Document all costs for debris management activities.

7. Ensure compliance with applicable laws, regulations, and policies.

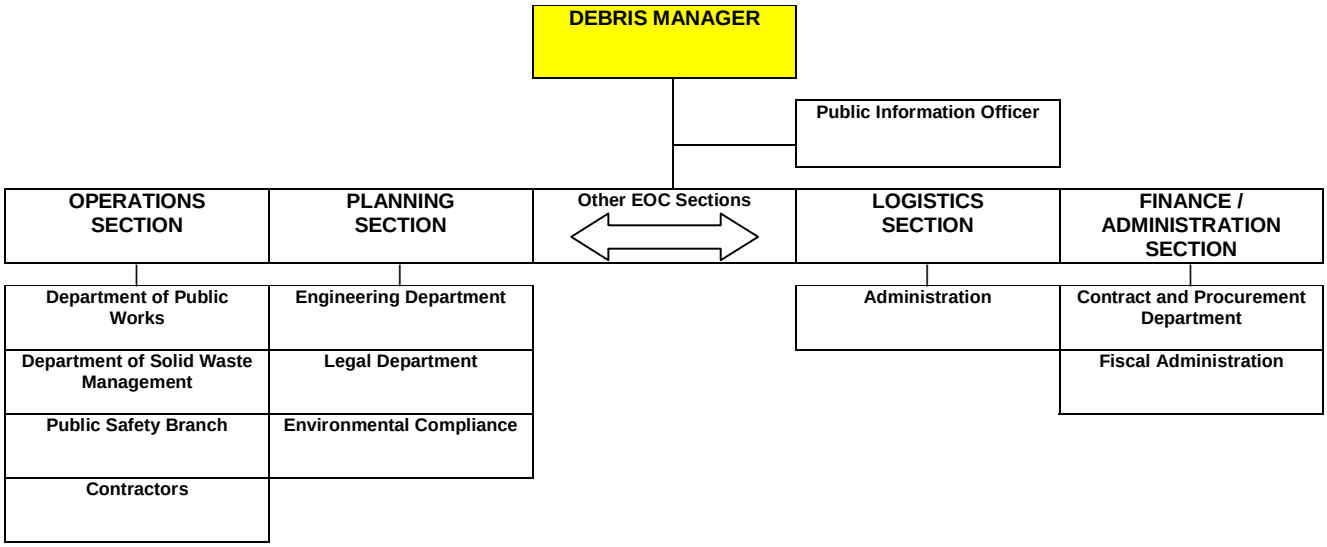
Fiscal Administration Staff:

1. Keep records of financial transactions for reimbursement of debris management activities.

2. Fund debris management activities.

3. Ensure compliance with applicable laws, regulations, and policies.

FIGURE 3: TYPICAL LOCAL JURISDICTION CHAIN OF COMMAND FOR DEBRIS MANAGEMENT



Nongovernmental Organization Roles and Responsibilities. Nongovernmental organizations can play a critical part in disaster debris management. The State and most local governments in Michigan simply do not have sufficient personnel for widespread / large-scale debris management operations without at least some involvement by volunteers from nongovernmental organizations. Although numerous organizations can potentially be involved in a debris management operation, the following organizations have, by virtue of their size, mission and/or disaster experience, been identified as key organizations that may be able to provide a large cadre of volunteers to assist with a debris management operation in Michigan:

Michigan Voluntary Organizations Active in Disaster (MIVOAD). The Michigan Voluntary Organizations Active in Disaster is a nationally sanctioned coalition of private and church-based relief organizations dedicated to providing disaster relief assistance to individuals and communities in need. The MIVOAD serves as a clearinghouse for the myriad disaster relief and human service organizations that operate in Michigan and elsewhere across the country. The MIVOAD is governed by an Executive Board, elected by the membership. That Board provides the single point of contact for mobilizing all MIVOAD resources. The MIVOAD member organizations are experienced and skilled in all facets of disaster operations, and can perform a wide variety of functions. Specific responsibilities of the MIVOAD related to debris management are as follows:

1. As required, assist the MSP/EMHSD in developing and revising this Disaster Debris Management Plan as a support plan to the MEMP. Upon request, assist local governments in developing and revising the debris management portions of the Public Works and Engineering Annex (Section / ESF) of their Emergency Operations Plan / Emergency Action Guidelines (or separate, stand-alone support plan).

2. Assist the MSP/EMHSD in identifying and training appropriate MIVOAD representatives in debris management operations as part of the State Disaster Debris Management Team within the SEOC and/or JFO structure, and/or a Local Disaster Debris Management Team within the local EOC and/or JFO structure.

3. Provide a representative to report to the SEOC (State Disaster Debris Management Center, if activated) to coordinate the participation of MIVOAD members in disaster debris management activities, and to ensure coordination with other MIVOAD relief efforts.

4. Upon request, mobilize appropriate member organizations and representatives within the MIVOAD structure to provide disaster debris management assistance to local governments and the State. Such assistance may be required at: 1) the SEOC and/or JFO; 2) the State Disaster Debris Management Center or its Satellite Disaster Debris Management Office(s); 3) the Base / Camps; or 4) local debris management facilities such as the EOC,

Local Disaster Debris Management Center, Staging Areas, or Temporary Debris Storage and Reduction (TDSR) Sites.

5. Provide continuous, updated information on debris management efforts of MIVOAD members for inclusion in state and/or local damage assessment reports, disaster situation / status reports, press releases, and the disaster after-action report.

6. As required, provide regular reports to the MIVOAD membership and other interested parties on the status of MIVOAD participation in state / local debris management operations.

(Note: the MIVOAD has the following member organizations: Lutheran Social Services of Michigan; Seventh Day Adventist / Adventist Community Services (ACS); United Methodist Committee on Relief (UMCOR); Salvation Army; Mennonite Disaster Services; American Red Cross (ARC); Michigan Crisis Response Association; ACCESS; International Aid; Southern Baptist Disaster Response; Church World Service; 2-1-1; Church of the Brethren; and Michigan React.)

Michigan Citizen Corps. If required, the MSP/EMHSD (as the state administering agency) can mobilize volunteers from the Michigan Citizen Corps to provide supplemental labor for debris management operations. Such assistance will be provided through the various local Citizen Corps Councils / Community Emergency Response Teams (CERTs) around the state. (Local jurisdictions can also mobilize volunteers themselves through their applicable Citizen Corps Council / CERT.) The Michigan Citizen Corps volunteers have been trained in various disaster response / recovery functions through the CERT program and are ready to assist local emergency response agencies when the need arises. Specific responsibilities of the Michigan Citizen Corps (MSP/EMHSD) related to debris management are as follows:

1. As required, assist the MSP/EMHSD in developing and revising this Disaster Debris Management Plan as a support plan to the MEMP. Upon request, arrange for local Citizen Corps Councils / CERTs to assist local officials in developing and revising the disaster debris management portions of the Public Works and Engineering Annex (Section / ESF) of their local Emergency Operations Plan / Emergency Action Guidelines (or separate, stand-alone support plan).

2. Assist the MSP/EMHSD in identifying and training Michigan Citizen Corps / CERT members in debris management operations to be part of the State Disaster Debris Management Team within the SEOC and/or JFO structure, and/or a Local Disaster Debris Management Team within the local EOC and/or JFO structure.

3. Provide a representative to report to the SEOC (State Disaster Debris Management Center, if activated) to coordinate the participation of Citizen Corps / CERT members in disaster debris management operations.

4. Upon request, mobilize appropriate Citizen Corps / CERT members to provide debris management assistance to local governments and the State. Such assistance may be required at: 1) the SEOC and/or JFO; 2) the State Disaster Debris Management Center or its Satellite Disaster Debris Management Office(s); 3) the Base / Camps; or 4) local debris management facilities such as the EOC, Local Disaster Debris Management Center, Staging Areas, or Temporary Debris Storage and Reduction (TDSR) Sites.

5. Provide continuous, updated information on debris management efforts of Citizen Corps / CERT members for inclusion in state and/or local damage assessment reports, disaster situation / status reports, press releases, and the disaster after-action report.

6. As required, provide regular reports to the Michigan Citizen Corps / CERT membership and other interested parties on the status of Citizen Corps / CERT participation in state / local debris management operations.

Facility-Specific Roles and Responsibilities. Disaster debris management positions at the State Disaster Debris Management Center and the various local support facilities will be filled by a combination of governmental employees and nongovernmental organization employees and volunteers. Because the disaster debris management organization and operation is customized to meet the needs of each incident, it is difficult to assign specific personnel to specific positions at each facility. Even the State Disaster Debris Management Team may have designees assigned to fill specific agency roles, since several members of the Team are also their agency's designated EMC and would have other responsibilities within the SEOC or other emergency coordination facilities that may preclude them from dedicated service to the state disaster debris management effort. The following task assignments are designed to provide basic guidance to the individuals that staff Collection Centers, Staging Areas,

the Base / Camps, and TDSR Sites. In an actual activation, these task assignments would be supplemented by expedient training provided by the MSP/EMHSD and/or other members of the State Disaster Debris Management Team, by FEMA, or both.

Collection Center Staff. The primary responsibilities of the individuals assigned to oversee / monitor Collection Centers are:

1. Install temporary signage (as needed) at the site indicating the locations of ingress and egress; loading / unloading areas; inspection stations; collection areas (for the various types of debris) – may be bins an/or separated piles; parking areas; handicapped person access (as applicable); restrooms (as applicable); etc.

2. Regulate the ingress and egress of vehicles transporting debris to the site.

3. To the extent possible, inspect vehicles to ensure that the debris being brought to the site is actually disaster-related debris and not general refuse. Work with local debris management officials to re-direct any non-disaster debris to a regulated waste facility.

4. In the event of an incident involving potential biological or WMD contamination, check the place of origin and route of transport of debris being brought to the Collection Center by conducting a brief interview with the hauler. Any suspected contamination should be reported immediately to the State Disaster Debris Management Center / SEOC for follow up as required. (The follow up measures will be dictated by the type and level of potential contamination. State assistance will likely be required through the MDEQ and possibly the MDMVA.)

5. Properly document monitoring to ensure FEMA reimbursement. Documentation should include a monitoring schedule / plan, load tickets, photographs, etc.

6. Ensure that the various types of debris are properly separated and stored in accordance with generally accepted standards / practices and applicable environmental regulations.

7. Ensure that debris unloading, loading, storage, and transportation activities are carried out in a safe and environmentally appropriate manner. Report any problems encountered to the State Disaster Debris Management Center for appropriate follow up.

8. If the site is dirt, determine the need to bring in water trucks on a regular basis to spray for dust control. Work with the State Disaster Debris Management Center to arrange for this service if required.

9. Monitor site usage to prevent theft, vandalism, or other inappropriate activities.

10. Provide regular status updates to the appropriate Disaster Debris Management Center / EOC (State and Local) regarding debris types and quantities, number of loads, status of collection efforts, problems encountered, etc.

11. For multi-day operations, open and close the site in accordance with the designated business hours. Properly secure the site at night.

12. When the site closes down for good, oversee the clean up / restoration of the site to ensure it is returned to its pre-incident condition in accordance with applicable environmental regulations. Report any damage or lingering impacts to the State Disaster Debris Management Center for appropriate follow up with applicable agencies.

Staging Area Staff. The primary responsibilities of the individuals assigned to oversee / monitor Staging Areas are:

1. Install temporary signage (as needed) at the site indicating the locations of loading / unloading areas, parking areas, handicapped person access, restrooms, etc.

2. Receive, temporarily park, and deploy vehicles, equipment, and crews that will be used in debris management operations.

3. In the event of an incident involving potential biological or WMD contamination, work with the State Disaster Debris Management Center, SPAO and SDM, FEMA and other involved parties (i.e., through the EMAC or the

private sector), and staff at other support facilities to ensure that resources for use in Michigan are not contaminated by checking their place of origin and route of transport. Any suspected contamination should be reported immediately to the State Disaster Debris Management Center / SEOC for follow up as required.

4. Record the type, kind, and quantity of resources deployed in the E Team "Critical Asset" Report (if using E Team), or the hardcopy form approved by the State Disaster Debris Management Center and found in the Attachment titled "Commodities Inventorying / Tracking Form." (Note: If using hardcopy forms, provide the information to the State Disaster Debris Management Center for centralized inventorying / tracking via E Team.)

5. Deploy staged assets at the direction of the SEOC Operations Section and/or SEOC Incident Management Section in order to meet the operational needs of the debris management effort.

6. Monitor site usage to prevent theft, vandalism, or other inappropriate activities.

7. For multi-day operations, open and close the site in accordance with the designated business hours. Properly secure the site at night.

8. Provide continuous, updated information to the SEOC on Staging Area activities for inclusion in state and/or local damage assessment reports, disaster situation / status reports, press releases, and the disaster after-action report.

9. Work with contractors and the SEOC / State Disaster Debris Management Center to resolve any problems or concerns that may arise related to Staging Area operations and/or the transportation / delivery of debris management resources from the Staging Area.

10. When the disaster debris management operation closes, oversee the clean up / restoration (as needed) of the site to ensure it is returned to its pre-incident condition. Report any damage or lingering impacts to the State Disaster Debris Management Center for appropriate follow up with applicable agencies.

Base / Camp Staff. The primary responsibilities of the individuals assigned to staff the Base / Camps are:

1. Install temporary signage (as needed) at the site (s) indicating the locations of parking areas, registration areas, handicapped person access, dining areas, restrooms, sleeping areas, showers / sanitation services, etc.

2. As appropriate, provide and equip areas at the Base / Camp for vehicle parking, equipment storage, registration, meal preparation, dining, sleeping, sanitation, recreation / relaxation, food / water storage, animal care, and other functions required for the incident circumstances. (Note: required materials, supplies, and equipment may come from a variety of sources, including federal, state and local agencies, nongovernmental organizations, and private donations. The MSP/EMHSD – SEOC Logistics Section is responsible for working with involved agencies and organizations to stock, staff and manage the Base / Camps.)

3. Ensure Base / Camp operations meet all applicable codes, regulations, and standards related to public health, safety, and sanitation. Report any problems to the MSP/EMHSD / State Disaster Debris Management Center for immediate investigation and resolution.

4. Register personnel staying at the Base / Camp, using the E Team "Volunteer Record" Report (if using E Team), or the hardcopy form approved by the State Disaster Debris Management Center and found in the Attachment titled "Deployed Personnel Registration Form." (Note: If using hardcopy forms, provide the information to the State Disaster Debris Management Center for centralized personnel tracking via E Team.) For personnel already registered through E Team ("Volunteer Record"), simply verify the information and check the appropriate status indicator.

5. Track the number of persons served at the Base / Camps and the type, kind, and quantities of supplies and materials used to support Camp operations. Report this information via the E Team "Agency Situation Report" (if using E Team), or the hardcopy "Agency Situation Report" approved by the State Disaster Debris Management Center and found in MSP/EMHSD Publication 901 – "Damage Assessment Handbook." (Note: If using hardcopy forms, provide the information to the State Disaster Debris Management Center for centralized inventorying / tracking via E Team.)

6. Deploy personnel / resources from the Base / Camp to the facilities / locations at which they are needed, at the direction of the State Disaster Debris Management Center and/or SEOC Incident Management Section, in order to meet the operational needs of the debris management operation.

7. Work with the SEOC, local agencies, and nongovernmental organizations to request, transport, receive, and store needed materials, equipment, and supplies to support Base / Camp operations.

8. Monitor site usage to prevent theft, vandalism, or other inappropriate activities. Properly secure the site at night.

9. Provide continuous, updated information to the SEOC on Base / Camp operations for inclusion in state and/or local damage assessment reports, disaster situation / status reports, press releases, and the disaster after-action report.

10. Work with the SEOC / State Disaster Debris Management Center to resolve any problems or concerns that may arise related to Base / Camp operations and/or the transportation of personnel / resources to their intended work locations.

11. When the Base / Camp operations close, oversee the clean up / restoration (as needed) of the site(s) to ensure it is (they are) returned to its pre-incident condition. Report any damage or lingering impacts to the State Disaster Debris Management Center for appropriate follow up with applicable agencies.

*Note: The affected local jurisdiction will normally select, establish and manage the Base and any required Camps, although there may be situations in which supplemental state assistance will be required. Camps will be used in those situations where the Local Disaster Debris Management Center / EOC determines that the Base does not have sufficient room and/or capabilities to accommodate the resources required for the debris management operation. Camps may also be established when: 1) sufficient hotel / motel rooms or other suitable accommodations for deployed resources are not available in the general incident area, 2) large numbers of resources have been activated to participate in incident response / recovery efforts (e.g., EMAC resources), and 3) the incident area is particularly large or widely dispersed. Camps are temporary locations at which food, water, sleeping areas, and sanitation services are provided to deployed resources. Possible facilities for use as the Base / Camps include county fairgrounds, state / local parks and recreation areas, local campgrounds, military bases, college campuses, school grounds (if tents are used), community centers or community recreation centers, etc.. Ideally, using the facility as a Base / Camp will not greatly interfere with its normal, day-to-day use.

Staffing of the Base / Camps will be handled through local and state agencies and nongovernmental organizations. In most cases, nongovernmental relief organizations will be relied upon to assist in meeting the material and supply needs of the Base / Camp operations. This includes the provision of food and water, bedding, and basic sanitation services. Under a Stafford Act declaration, the federal government <u>may</u> be able to provide technical and logistical assistance regarding the establishment and operation of the Base / Camps. However, federal officials are NOT responsible for management of or security at the Base / Camps; those are local and State of Michigan functions. All federal assistance is obtained and coordinated through the MSP/EMHSD in the SEOC.

Temporary Debris Storage and Reduction Site Staff (Site Manager). The primary responsibilities of the individuals assigned to oversee / monitor local TDSR Sites are:

1. Install temporary signage (as needed) at the site indicating the locations of ingress and egress; roadways and buffer zones; loading / unloading areas; inspection stations; storage areas (for the various types of debris); parking areas; material reduction areas (as appropriate, burning areas, chipping / grinding / shredding areas, compacting areas, and recycling areas); handicapped person access (as applicable); restrooms; etc.

2. Regulate the ingress and egress of trucks transporting debris to the site.

3. To the extent possible, inspect trucks to ensure that the debris being brought to the site is actually disaster-related debris and not general refuse. Work with the Department of Solid Waste Management to re-direct any non-disaster debris to a regulated waste facility.

4. In the event of an incident involving potential biological or WMD contamination, check the place of origin and route of transport of debris being brought to the TDSR Site by conducting a brief interview with the hauler. Any suspected contamination should be reported immediately to the State Disaster Debris Management Center /

SEOC for follow up as required by the MDEQ. (The follow up measures will be dictated by the type and level of potential contamination.)

5. Properly document monitoring to ensure FEMA reimbursement. Documentation should include a monitoring schedule / plan, load tickets, photographs, etc.

6. Ensure that the various types of debris are properly separated and stored in accordance with generally accepted standards / practices and applicable environmental regulations.

7. Ensure that debris reduction activities are carried out in a safe and environmentally appropriate manner. Report any problems encountered to the Disaster Debris Management Center (Local and/or State) for appropriate follow up.

8. If the site is dirt, determine the need to bring in water trucks on a regular basis to spray for dust control. Work with the Disaster Debris Management Center (Local and/or State) to arrange for this service if required.

9. Monitor site usage to prevent theft, vandalism, or other inappropriate activities.

10. Provide regular status updates to the Disaster Debris Management Center (Local and State) and local EOC regarding debris types and quantities, number of loads, status of reduction efforts, problems encountered, etc.

11. For multi-day operations, open and close the site in accordance with the designated business hours. Properly secure the site at night.

12. When the site closes down for good, oversee the clean up / restoration of the site to ensure it is returned to its pre-incident condition in accordance with applicable environmental regulations. Report any damage or lingering impacts to the Disaster Debris Management Center (Local and/or State) for appropriate follow up with applicable agencies.

Debris Monitoring Staff. The primary responsibilities of the individuals assigned to monitor the debris management operation (at established facilities or in the field) are:

1. Measure and certify truck capacities (and recertify on a regular basis as appropriate). (Note: Use the FEMA "Truck Certification Form" found in the Attachment titled "Debris Monitoring Issues" for this purpose.)

2. Complete and physically control load tickets (at TDSR Site inspection tower or in field). (Note: Use the FEMA "Load Ticket" found in the Attachments titled "Debris Management Record Keeping" and "Debris Monitoring Issues" for this purpose. Guidance for completing load tickets can also be found in the "Debris Monitoring Issues" attachment.)

3. Approve the removal of hazardous trees, including hangers, leaners, stumps, and those on private property that pose a danger to public safety. (Note: Use the FEMA "Roving Monitor Log" or "Daily Issues Log" to record the locations and provide comments as appropriate. Use the FEMA "Hazardous Stump Worksheet" found as an attachment to FEMA Recovery Policy 9523.11 to document hazardous stumps.)

4. Ensure that trucks are accurately credited for their load and are not artificially loaded to maximize reimbursement (e.g., debris is wetted, fluffed or not compacted). (Refer to the Attachment titled "Debris Monitoring Issues" for guidance.)

5. Ensure that hazardous waste is not mixed in debris loads.

6. Report improper equipment usage or breaches in safety standards (for personnel and/or the general public) to the State Debris Manager / Disaster Debris Management Center.

7. Report to the State Debris Manager / Disaster Debris Management Center if work completion schedules are not on target.

8. Report to the State Debris Manager / Disaster Debris Management Center if debris removal work does not comply with local ordinances as well as state and federal regulations.

9. Ensure that only debris specified in the contract scope of work is collected and identify work as potentially eligible or ineligible.

10. Monitor development and restoration of Collection Center sites and TDSR Sites.

11. Provide regular updates to the State Disaster Debris Management Center on the status of debris removal and related activities.

ATTACHMENTS:
Sample Public Information Materials – Debris Clearance, Collection, and Sorting
State Disaster Debris Management Team – Membership Roster / Contact List
Debris Categories and Forecasting
Debris Collection Strategy
Temporary Debris Storage and Reduction Sites
Debris Management Cycle: Planning and Operational Considerations
Debris Management Contract Considerations
Sample Debris Management Contracts
Debris Management Record Keeping
Debris Monitoring Issues
Debris Removal from Private Property Special Considerations
Disposal of Disaster Debris
Debris Collection and Management Site Hazard Analysis Guidance Tool
Case Study: “Tree Central” in Michigan
Federal Debris Management Resources
Commodities Inventorying / Tracking Form (Hardcopy of E Team “Critical Asset” Report)
Deployed Personnel Registration Form (Hardcopy of E Team “Volunteer Record” Report)
Pre-Identified Debris Management Facilities – By MSP/EMHSD District

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SAMPLE PUBLIC INFORMATION MATERIALS – DEBRIS CLEARANCE, COLLECTION, AND SORTING

SAMPLE PRESS RELEASE #1

(Curbside Collection)

Date

FOR IMMEDIATE RELEASE

FOR MORE INFORMATION CONTACT:
Name / Title of State or Local Debris Manager
Telephone Number / Facsimile Number / E-Mail Address
(Note: list the hours / days of the week this telephone number is staffed.)
Name of Agency / Web Site Address

Disaster Debris Removal to Begin

(Note: This would be used for a curbside collection / removal operation that does NOT emphasize recycling.)

Recovery efforts are underway in response to (describe disaster conditions) in (name of jurisdiction). Clearing and removing disaster debris is a major part of the recovery effort. (Name of agency) will begin debris collection and removal in (name of jurisdiction) on (beginning date) and will continue until (end date). Residents are asked to **separate** disaster debris as follows, and **place it in piles at the curb in the public right-of-way**, not on private property:

- **Construction and demolition materials** (building construction materials – wood, metal, drywall, shingles, etc., as well as building contents and personal property – furnishings, clothing, appliances, etc.)
- **Vegetative materials** (trees, limbs, brush, leaves, etc.)
- **Household hazardous waste** (paints, cleaners, oils, batteries, pesticides, etc.); please be sure these materials are in a secured container and are not leaking in any way.
- **Dirt / sediment** (soil, sand, gravel, etc.)

Please be advised that debris removal crews **WILL NOT**, at this time, enter onto private property to collect or remove debris. All debris must be placed in separate piles at the curb in the public right-of-way, as described above. It is the home / business owner's responsibility to bring the debris to the curb and to properly separate it. Your cooperation will make this debris removal operation proceed smoothly and ensure that the community recovers as quickly as possible.

If placing your materials at the curb will cause a traffic or other safety hazard, or if you are unable to move debris to the curb due to physical limitations, debris size / weight, etc., please call (telephone number) before (date / time) to arrange for special pick-up at a later time. Please note that debris **WILL NOT** be removed from private property without a signed Right-of-Entry Agreement from the property owner. (This requirement will be explained when you call.)

To report unsafe debris situations (e.g., leaning trees, trees on houses, partially collapsed structures, etc.) please call (telephone number) immediately.

Please note that this operation is **ONLY** for disaster debris. Please do not attempt to place garbage or other household refuse with the disaster debris, as it will not be accepted. Regular trash removal services in the community will continue as scheduled.

SAMPLE PRESS RELEASE #2

(Curbside Collection)

Date

FOR IMMEDIATE RELEASE

FOR MORE INFORMATION CONTACT:
Name / Title of State or Local Debris Manager
Telephone Number / Facsimile Number / E-Mail Address
(Note: list the hours / days of the week this telephone number is staffed.)
Name of Agency / Web Site Address

Disaster Debris Removal to Begin

(Note: This would be used for a curbside collection / removal operation that EMPHASIZES RECYCLING.)

Recovery efforts are underway in response to (describe disaster conditions) in (name of jurisdiction). Clearing and removing disaster debris is a major part of the recovery effort. (Name of agency) will begin debris collection and removal in (name of jurisdiction) on (beginning date) and will continue until (end date). In an effort to reduce the amount of debris that has to be disposed of, as well as the associated debris disposal costs, the (name of jurisdiction) will be recycling as many materials as possible. Residents are asked to **separate** disaster debris as follows, and **place it in piles at the curb in the public right-of-way**, not on private property:

- **Metals** (window frames; sheet metal siding and roofing; cast iron tubs / sinks; railings; appliances such as washers, dryers, refrigerators, and stoves; mobile home frames; metal parts from cars; personal belongings that are metal such as damaged tools; metal furnishings such as chairs, tables, file cabinets, and bed frames; metal pipes; etc.)
- **Wood materials** (framing materials; plywood; wood flooring; decks and decking material; wood furniture such as tables and chairs; personal belongings that are wood such as picture frames; etc.)
- **Dirt / sediment** (soil, sand, gravel, etc.)
- **Concrete** (concrete chunks; concrete block; bricks; concrete pavers; etc.)
- **Tires** (from automobiles, bicycles, trailers, etc.)
- **Glass** (empty / clean bottles and jars, household items, window panes, glass block, etc.)
- **Residual construction and demolition materials** (non-recyclable building construction materials – drywall, asphalt shingles, plastic sinks / tubs, floor tiles, etc.; non-recyclable building contents and personal property – carpeting / rugs, furnishings, clothing, etc.)
- **Vegetative materials** (trees, limbs, brush, leaves, etc.)
- **Household hazardous waste** (paints, cleaners, oils, batteries, pesticides, etc.); please be sure these materials are in a secured container and are not leaking in any way.

Please be advised that debris removal crews **WILL NOT**, at this time, enter onto private property to collect or remove debris. All debris must be placed in separate piles at the curb in the public right-of-way, as described above. It is the home / business owner's responsibility to bring the debris to the curb and to properly separate it. Your cooperation will make this debris removal operation proceed smoothly and ensure that the community recovers as quickly as possible.

If placing your materials at the curb will cause a traffic or other safety hazard, or if you are unable to move debris to the curb due to physical limitations, debris size / weight, etc., please call (telephone number) before (date / time) to arrange for special pick-up at a later time. Please note that debris **WILL NOT** be removed from private property without a signed Right-of-Entry Agreement from the property owner. (This requirement will be explained when you call.)

To report unsafe debris situations (e.g., leaning trees, trees on houses, partially collapsed structures, etc.) please call (telephone number) immediately.

Please note that this operation is **ONLY** for disaster debris. Please do not attempt to place garbage or other household refuse with the disaster debris, as it will not be accepted. Regular trash removal services in the community will continue as scheduled.

SAMPLE PRESS RELEASE #3

(Use of Collection Centers)

Date

FOR IMMEDIATE RELEASE

FOR MORE INFORMATION CONTACT:
Name / Title of State or Local Debris Manager
Telephone Number / Facsimile Number / E-Mail Address
(Note: list the hours / days of the week this telephone number is staffed.)
Name of Agency / Web Site Address

Disaster Debris Removal to Begin
(Note: This would be used for a collection / removal operation that EMPHASIZES RECYCLING and the use of Collection Centers.)

Recovery efforts are underway in response to (describe disaster conditions) in (name of jurisdiction). Clearing and removing disaster debris is a major part of the recovery effort. (Name of agency) will begin debris collection operations in (name of jurisdiction) on (beginning date) and will continue until (end date). Several debris **Collection Centers** will be used. In an effort to reduce the amount of debris that has to be disposed of, as well as the associated debris disposal costs, the (name of jurisdiction) will be recycling as many materials as possible. Residents are asked to transport their disaster-related debris to any of the Collection Centers that have been opened throughout the community (see locations below) for drop off. At the Collection Center, residents must **separate** their disaster debris as follows, and **place it in large bins for**:

- **Metals** (window frames; sheet metal siding and roofing; cast iron tubs / sinks; railings; appliances such as washers, dryers, refrigerators, and stoves; mobile home frames; metal parts from cars; personal belongings that are metal such as damaged tools; metal furnishings such as chairs, tables, file cabinets, and bed frames; metal pipes; etc.)
- **Wood materials** (framing materials; plywood; wood flooring; decks and decking material; wood furniture such as tables and chairs; personal belongings that are wood such as picture frames; etc.)
- **Dirt / sediment** (soil, sand, gravel, etc.)
- **Concrete** (concrete chunks; concrete block; bricks; concrete pavers; etc.)
- **Tires** (from automobiles, bicycles, trailers, etc.)
- **Glass** (empty / clean bottles and jars, household items, window panes, glass block, etc.)
- **Residual construction and demolition materials** (non-recyclable building construction materials – drywall, asphalt shingles, plastic sinks / tubs, floor tiles, etc.; non-recyclable building contents and personal property – carpeting / rugs, furnishings, clothing, etc.)
- **Vegetative materials** (trees, limbs, brush, leaves, etc.)
- **Household hazardous waste** (paints, cleaners, oils, batteries, pesticides, etc.); please be sure these materials are in a secured container and are not leaking in any way.

Separate bins will be available for each type of debris described above. Staff from the (name of agency) will be present at each Collection Center to aid residents in the proper separation and disposal of their disaster debris. Please note that general curbside debris collection / removal will **not occur**. It is each resident's responsibility to transport (or arrange for the transport of) their disaster-related debris to one of the Collection Centers and properly unload and separate the debris. Residents are **NOT** to leave their disaster-related debris by the curbside or in the public right-of-way. This may result in a citation by the (name of agency) and a possible fine. Your cooperation will make this debris removal operation proceed smoothly and ensure that the community recovers as quickly as possible.

Residents that are physically and/or financially unable to transport (or arrange for the transport of) their disaster-related debris to a Collection Center are asked to call (telephone number) on (what days / between what hours?) before (deadline date) to arrange for assistance. Family members or caretakers are asked to call on behalf of those that are not able to make the call themselves. Please note that debris **WILL NOT** be removed from private property without a signed Right-of-Entry Agreement from the property owner. (This requirement will be explained when you call.)

The Collection Centers will only accept disaster-related debris. Please do not attempt to place garbage or other household refuse with the disaster debris, as it will not be accepted. Regular trash removal services in the community will continue as scheduled.

Debris Collection Center Locations:

- (Location / Address / Hours of Operation of Collection Center #1)
- (Location / Address / Hours of Operation of Collection Center #2)
- (Location / Address / Hours of Operation of Collection Center #3)

Etc.

(Note: If both curbside collection and Collection Centers will be used, then blend the Sample Press Releases together to create a single Press Release with the correct amount of emphasis on each collection method.)

SAMPLE PUBLIC SERVICE ANNOUNCEMENT #1

(Name of jurisdiction) Office of Emergency Management
OR
Michigan Department of State Police, Emergency Management and Homeland Security Division
(Address)

FOR USE UNTIL (DATE)

DISASTER DEBRIS REMOVAL

(Note: This would be used for a curbside collection / removal operation that does NOT emphasize recycling.)

30 SECONDS

Due to the recent (describe disaster conditions), the (name of local jurisdiction / State of Michigan) is coordinating the collection and removal of disaster debris within (name of jurisdiction). (Name of agency) will begin debris collection and removal on (beginning date) and will continue until (end date). Residents are asked to separate disaster debris into four piles:

- Building materials and contents;
- Trees, limbs, and brush;
- Household hazardous waste; and
- Dirt, sand, and gravel.

Please place the debris piles at the curb in the public right-of-way in front of your home or business by (date / time). If properly separated, it will be picked up by crews and disposed of. For further information, call (telephone number) or visit the (name of agency) web site at (web site address). Thank you.

SAMPLE PUBLIC SERVICE ANNOUNCEMENT #2

(Name of jurisdiction) Office of Emergency Management
OR
Michigan Department of State Police, Emergency Management and Homeland Security Division
(Address)

FOR USE UNTIL (DATE)

DISASTER DEBRIS REMOVAL

(Note: This would be used for a curbside collection / removal operation that EMPHASIZES RECYCLING.)

45 SECONDS

Due to the recent (describe disaster conditions), the (name of local jurisdiction / State of Michigan) is coordinating the collection and removal of disaster debris within (name of jurisdiction). (Name of agency) will begin debris collection and removal on (beginning date) and will continue until (end date). In order to recycle as many materials as possible, residents are asked to separate disaster debris into the following piles:

- Metals;
- Wood materials;
- Dirt / sand / gravel;
- Concrete / bricks;
- Tires;
- Glass;
- Residual construction materials and building contents;
- Trees, limbs, and brush;
- Household hazardous waste; and
- Dirt, sand, and gravel.

Please place the debris piles at the curb in the public right-of-way in front of your home or business by (date / time). If properly separated, it will be picked up by crews. For further information, call (telephone number) or visit the (name of agency) web site at (web site address). Thank you.

SAMPLE PUBLIC SERVICE ANNOUNCEMENT #3

(Name of jurisdiction) Office of Emergency Management
OR
Michigan Department of State Police, Emergency Management and Homeland Security Division
(Address)

FOR USE UNTIL (DATE)

DISASTER DEBRIS REMOVAL
(Note: This would be used for a collection / removal operation that does NOT emphasize recycling and that uses Collection Centers.)

30-45 SECONDS

Due to the recent (describe disaster conditions), the (name of local jurisdiction / State of Michigan) is coordinating the collection and removal of disaster debris within (name of jurisdiction). (Name of agency) will begin debris collection operations on (beginning date) and will continue until (end date). Debris Collection Centers have been established at (list locations). Residents are asked to transport their disaster-related debris to any of the Collection Centers (between what hours?) for drop off. At the Collection Center, residents must separate their disaster debris and place it in large bins for:

- Building materials and contents;
- Trees, limbs, and brush;
- Household hazardous waste; and
- Dirt, sand, and gravel.

Staff from the (name of agency) will be present at each Collection Center to help. The Collection Centers will only accept disaster-related debris. Garbage or other household refuse will not be accepted. For further information, call (telephone number) or visit the (name of agency) web site at (web site address). Thank you.

SAMPLE PUBLIC SERVICE ANNOUNCEMENT #4

(Name of jurisdiction) Office of Emergency Management
OR
Michigan Department of State Police, Emergency Management and Homeland Security Division
(Address)

FOR USE UNTIL (DATE)

DISASTER DEBRIS REMOVAL
(Note: This would be used for a collection / removal operation that EMPHASIZES RECYCLING and the use of Collection Centers.)

45 SECONDS

Due to the recent (describe disaster conditions), the (name of local jurisdiction / State of Michigan) is coordinating the collection and removal of disaster debris within (name of jurisdiction). (Name of agency) will begin debris collection operations on (beginning date) and will continue until (end date). Debris Collection Centers have been established at (list locations). Residents are asked to transport their disaster-related debris to any of the Collection Centers (between what hours?) for drop off. In an effort to reduce the amount of debris that has to be disposed of, as well as the associated debris disposal costs, the (name of jurisdiction) will be recycling as many materials as possible. At the Collection Center, residents must separate their disaster debris and place it in large bins for:

- Metals;
- Wood materials;
- Dirt / sand / gravel;
- Concrete / bricks;
- Tires;
- Glass;
- Residual construction materials and building contents;
- Trees, limbs, and brush;
- Household hazardous waste; and
- Dirt, sand, and gravel.

Staff from the (name of agency) will be present at each Collection Center to help. The Collection Centers will only accept disaster-related debris. Garbage or other household refuse will not be accepted. For further information, call (telephone number) or visit the (name of agency) web site at (web site address). Thank you.

(Note: If both curbside collection and Collection Centers will be used, then blend the Sample Public Service Announcements together to create a single Public Service Announcement with the correct amount of emphasis on each collection method.)

SAMPLE HANDBILL / DOOR HANGER #1: NOTICE OF DEBRIS REMOVAL
(Curbside collection with no emphasis on recycling)

(NAME OF JURISDICTION)

DISASTER DEBRIS REMOVAL

Due to the recent (describe disaster conditions), the (name of jurisdiction / State of Michigan) is coordinating the collection and removal of disaster debris within (name of jurisdiction). (Name of agency) will begin debris collection and removal on (beginning date) and will continue until (end date). Residents are asked to separate disaster debris into four piles:

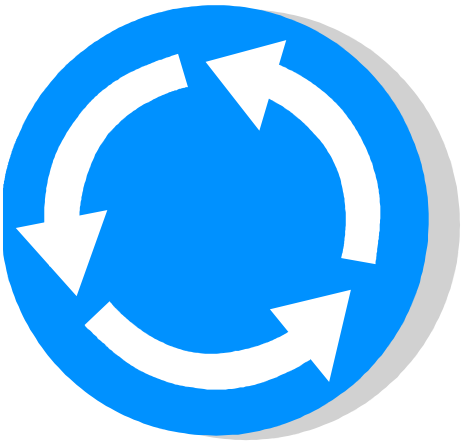
- Building materials and contents;
- Trees, limbs, and brush;
- Household hazardous waste; and
- Dirt, sand, and gravel.

Please **place the debris piles at the curb in the public right-of-way** in front of your home or business by (date / time). If properly separated, it will be picked up by crews and disposed of. For further information, call (telephone number) or visit the (name of agency) web site at (web site address).

THANK YOU.

SAMPLE HANDBILL / DOOR HANGER #2: NOTICE OF RECYCLING / DEBRIS REMOVAL
(Curbside collection with emphasis on recycling)

(NAME OF JURISDICTION)



DISASTER DEBRIS RECYCLING / REMOVAL

Due to the recent (describe disaster conditions), the (name of jurisdiction / State of Michigan) is coordinating the collection and removal of disaster debris within (name of jurisdiction). (Name of agency) will begin debris collection and removal on (beginning date) and will continue until (end date). In order to recycle as many materials as possible, residents are asked to separate disaster debris into the following piles:

- Metals;
- Wood materials;
- Dirt / sand / gravel;
- Concrete / bricks;
- Tires;
- Glass;
- Residual construction materials and building contents;
- Trees, limbs, and brush; and
- Household hazardous waste.

Please place the debris piles at the curb in the public right-of-way in front of your home or business by (date / time). If properly separated, it will be picked up by crews. For further information, call (telephone number) or visit the (name of agency) web site at (web site address). THANK YOU.

SAMPLE HANDBILL / DOOR HANGER #3: NOTICE OF DEBRIS REMOVAL
(Use of Collection Centers with no emphasis on recycling)

(NAME OF JURISDICTION)

DISASTER DEBRIS REMOVAL

Due to the recent (describe disaster conditions), the (name of jurisdiction / State of Michigan) is coordinating the collection and removal of disaster debris within (name of jurisdiction). (Name of agency) will begin debris collection operations on (beginning date) and will continue until (end date). Debris Collection Centers have been established at (list locations). Residents are asked to transport their disaster-related debris to any of the Collection Centers (between what hours?) for drop off. At the Collection Center, residents must separate their disaster debris and place it in large bins for:

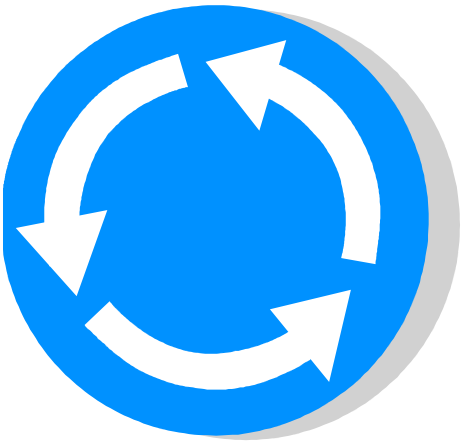
- Building materials and contents;
- Trees, limbs, and brush;
- Household hazardous waste; and
- Dirt, sand, and gravel.

Staff from the (name of agency) will be present at each Collection Center to help. The Collection Centers will only accept disaster-related debris. Garbage or other household refuse will not be accepted. For further information, call (telephone number) or visit the (name of agency) web site at (web site address).

THANK YOU.

SAMPLE HANDBILL / DOOR HANGER #4: NOTICE OF RECYCLING / DEBRIS REMOVAL
(Use of Collection Centers with emphasis on recycling)

(NAME OF JURISDICTION)



DISASTER DEBRIS RECYCLING / REMOVAL

Due to the recent (describe disaster conditions), the (name of jurisdiction / State of Michigan) is coordinating the collection and removal of disaster debris within (name of jurisdiction). (Name of agency) will begin debris collection operations on (beginning date) and will continue until (end date). Debris Collection Centers have been established at (list locations). Residents are asked to transport their disaster-related debris to any of the Collection Centers (between what hours?) for drop off. In order to recycle as many materials as possible, at the Collection Center residents must separate their disaster debris and place it in large bins for:

- Metals;
- Wood materials;
- Dirt / sand / gravel;
- Concrete / bricks;
- Tires;
- Glass;
- Residual construction materials and building contents;
- Trees, limbs, and brush; and
- Household hazardous waste.

Staff from the (name of agency) will be present at each Collection Center to help. The Collection Centers will only accept disaster-related debris. Garbage or other household refuse will not be accepted. For further information, call (telephone number) or visit the (name of agency) web site at (web site address). THANK YOU.

(Note: If both curbside collection and Collection Centers will be used, then blend the Sample Handbill / Door Hangers together to create a single Handbill / Door Hanger with the correct amount of emphasis on each collection method.)

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STATE DISASTER DEBRIS MANAGEMENT TEAM – MEMBERSHIP ROSTER / CONTACT LIST*

Name	Agency	Role	Phone #	Facsimile #	E-Mail Address
	Emergency Management & Homeland Security Division, Michigan Department of State Police	State Public Assistance Officer			
	Emergency Management & Homeland Security Division, Michigan Department of State Police	State Public Assistance Officer (Alternate) State Debris Manager (Alternate)			
	Emergency Management & Homeland Security Division, Michigan Department of State Police	Public Information Officer			
	Emergency Management & Homeland Security Division, Michigan Department of State Police	State Debris Manager; assist in developing / revising this plan			
	Emergency Management & Homeland Security Division, Michigan Department of State Police	Labor resources (Michigan Citizen Corps / CERT)			
	Michigan Department of Agriculture	Technical assistance regarding crop and livestock debris disposal			
	Michigan Department of Corrections	Facility / labor / transportation resources			
	Michigan Department of Environmental Quality	Technical assistance regarding debris reduction / storage / disposal			
	Michigan Department of Management and Budget	Facility / labor / transportation resources			
	Michigan Department of Military and Veterans Affairs	Facility / labor / transportation resources			
	Michigan Department of Natural Resources	Facility / labor / transportation resources; technical assistance regarding forest and wildlife debris disposal			
	Michigan Department of Transportation	Facility / labor / transportation resources; technical engineering expertise; issue permits for oversize and overweight loads			
	Michigan Voluntary Organizations Active in Disaster	Coordinator of MIVOAD resources			
	Emergency Management & Homeland Security Division, Michigan Department of State Police	Develop / revise this plan			
	Emergency Management & Homeland Security Division, Michigan Department of State Police	Assist in developing / revising this plan			
	Michigan Department of Community Health – support agency to debris management operation	**Technical assistance regarding animal debris disposal**			
	Michigan Department of Human Services / Michigan Community Service Commission – support agency to debris management operation **Michigan Department of Human Services**	**Labor resources (from AmeriCorps and other volunteer programs)**			

Note: Agencies shaded in gray are support agencies to the State Disaster Debris Management Team. *Names and contact information intentionally left blank on web-post edition.

DEBRIS CATEGORIES AND FORECASTING

The quantity and type of debris generated is a function of the type of disaster, its location, and its magnitude, duration, and intensity. The quantity and type of debris generated, its location, and the size of the area over which it is dispersed directly impacts the collection and disposal methods used to address the debris problem, associated costs incurred, and the speed with which the problem can be addressed. It is necessary to know the types of debris that various disasters are likely to generate, as this information is essential for debris operations planning. The following is a list of the disasters in Michigan that are most likely to generate a significant quantity of debris, and the type of debris that is likely to be generated:

Major Categories of Disaster Debris in Michigan*

Disaster	Construction and Demolition (C&D)	Sediment	Green Waste	Ash and Charred Wood	Household Hazardous Waste (HHW)	Industrial Hazardous Waste (IHW)	Animal Carcasses
Tornado / Severe Storm	■		■		■	■	■
Flood	■	■	■		■	■	■
Wildfire	■			■	■	■	
Ice Storm	■		■				
Terrorist Attack**	■				■	■	
Widespread Plant or Animal Disease			■				■
Widespread Insect Infestation			■				

Sources: U.S. Environmental Protection Agency, Federal Emergency Management Agency, MSP/EMHSD Disaster Files.
*Refer to tables on the following pages for descriptions of disaster debris categories.
**An attack that results in physical damage. Some types of attacks (e.g., bioterrorism attack) may not cause physical damage that would result in debris; rather, the primary impact would be to human life.

Tornado / Severe Storm Debris. Damage from tornadoes is caused by high-velocity rotating winds. The severity of the damage depends on the size of the tornado funnel and the length of time the funnel touches the ground. Damage is generally confined to a narrow path extending up to half a mile wide and from a hundred yards to several miles long. Tornado debris typically includes damaged and destroyed structures, green waste (vegetative material), personal property, household hazardous waste, and possibly animal carcasses. The debris is typically mixed and widely scattered within the tornado path. Tornadoes that occur near lakes or other waterways may result in sunken boats, which can cause navigation hazards unless properly removed and disposed of.

Debris from severe storms is similar to that of tornadoes, but is generally more widely spread.

Flood Debris. Debris from floods is caused by structural inundation and high-velocity water flow. As soon as flood waters recede, people begin to dispose of flood-damaged household items. Mud, sediment, sandbags, and other reinforcing materials also add to the volume of debris needing management, as do materials from demolished and dismantled houses. Household and industrial hazardous waste and animal carcasses are often prevalent in flood disasters. Floods are often the most difficult disaster events relative to debris, as most possessions are usually destroyed. Floods can also cause landslides in elevated terrain.

Ice Storm Debris. Ice storms typically generate large quantities of green waste. Utility poles and wires may be severely damaged and also become debris. If cold weather continues after an ice storm, utility restoration may be slowed. Restricted access and power outages can become major problems when removing debris caused by an ice storm. Flooding may occur if major snow accumulation is followed by rapid warming.

Wildfire Debris. Wildfires generally leave less debris than other types of disasters; however, they still can generate considerable waste. For example, demolished houses contribute noncombustible debris. Burned out cars and other metal objects, as well as ash and charred wood waste, also must be managed. In addition, large-scale loss of plants serving as ground cover can lead to mud slides, adding debris to the waste stream. With the increase of homes in woodlands, wildfires now generate more debris than ever.

Terrorist Attack Debris. Terrorist attacks fall into two categories with regard to debris: those that cause physical destruction and therefore generate debris (i.e., bombings, nuclear detonation), and those that primarily cause injury or loss of human life but little physical destruction (i.e., bioterrorism, chemical attack). In the event of a terrorist attack (such as a bombing or nuclear detonation) which results in widespread and/or severe physical damage, the types of debris that can be expected would be similar to that found in a tornado or severe storm. The debris likely would include damaged and destroyed structures, personal property, and (depending on attack location) possibly green waste and household and/or industrial hazardous waste. It is entirely possible that human remains would be scattered throughout the attack debris, turning the attack site into a crime, medical response, and possibly environmental response scene. This would necessarily restrict efforts to collect, separate, and remove debris. Therefore, debris management operations during terrorist attacks would likely proceed at a slower pace and require more labor-intensive sorting and handling of debris.

Widespread Plant Disease or Insect Infestation Debris. A widespread plant disease or insect infestation could potentially create a debris management problem that is statewide or regional in nature. Depending on the nature of the disease, the green waste generated could include trees and brush, agricultural crops, or aquatic vegetation.

Widespread Animal Disease Debris. In the event of an outbreak of "mad cow," foot-and-mouth disease, or other wide-spread animal infectious disease, disposal of animal carcasses may be required. In particularly severe and/or widespread incidents, the number of carcasses may number in the thousands or possibly even hundreds of thousands. Disposal of animal carcasses may also be an issue in other disasters, especially floods.

Disaster Intensity Scales. Disaster Intensity Scales have been developed for various types of disasters that relate the intensity of an event to the anticipated type and magnitude of damage. In Michigan, the Fujita Scale (for tornadoes) and the flood probability of return period serve as the best tools to predict large scale debris generating disasters. Wildfires and ice storms also have some measure of intensity which can aid in debris management planning.

Disaster Intensity Scales

Disaster	Scale	Debris Indicator (General)
Tornado	Fujita Scale: F6 – Inconceivable tornado (319-379 mph) F5 – Incredible tornado (261-318 mph) F4 – Devastating tornado (207-260 mph) F3 – Severe tornado (158-206 mph) F2 – Significant tornado (113-157 mph) F1 – Moderate tornado (73-112 mph) F0 – Gale tornado (40-72 mph)	The higher the Fujita Scale rating, the more debris that is likely to be generated. (For example, an F5 tornado will generate more debris than an F0 tornado. The size and nature of the tornado path will also determine the amount and type of debris generated.)
Flood	Probability of return (in a given year): 500-year flood – .2% chance of occurrence 200-year flood – .5% chance of occurrence 100-year flood – 1% chance of occurrence 50-year flood – 2% chance of occurrence 10-year flood – 10% chance of occurrence	The lower the flood probability, the more debris that is likely to be generated. (For example, a 500-year flood is likely to generate more debris than a 100-year flood because it is larger in scope / magnitude and generally much more severe in its damaging capability.)
Wildfire	Palmer Drought Severity Index (PDSI): 4.0 or more – Extremely wet 3.0 to 3.99 – Very wet 2.0 to 2.99 – Moderately wet 1.0 to 1.99 – Slightly wet 0.5 to 0.99 – Incipient wet spell 0.49 to -0.49 – Near normal -0.5 to -0.99 – Incipient dry spell -1.0 to -1.99 – Mild drought -2.0 to -2.99 – Moderate drought -3.0 to -3.99 – Severe drought -4.0 or less – Extreme drought	Wildfire intensity relates (in general) to drought severity and duration. The Palmer Drought Severity Index is a soil moisture algorithm that uses temperature and rainfall information to determine dryness. The PDSI is most effective in determining long term drought. It indicates prolonged and abnormal moisture deficiency or excess. Generally speaking, the lower the PDSI index value the greater the likelihood that larger, more intense wildfires will occur. Those wildfires also tend to result in more debris. (For example, a wildfire that occurs during a period in which the PDSI is -4.0 is more likely to be intense and generate large quantities of debris than is a wildfire that occurs when the PDSI is 3.0.) (Note: the MDNR uses the Canadian Forest Fire Danger Rating System [CFFRS] to determine fire danger ratings and staffing levels.)
Ice Storm	Probability of return (in a given year): 500-year storm – .2% chance of occurrence 200-year storm – .5% chance of occurrence 100-year storm – 1% chance of occurrence 50-year storm – 2% chance of occurrence 10-year storm – 10% chance of occurrence	The lower the storm probability, the more debris that is likely to be generated. (For example, a 500-year storm is likely to generate more debris than a 100-year storm because it is larger in scope / magnitude and generally much more severe in its damaging capability.)

Sources: Federal Emergency Management Agency; National Climate Prediction Center (NOAA); National Drought Mitigation Center; Michigan Hazard Analysis.

Debris Characteristics. The following chart identifies the characteristics of the debris associated with the primary debris-generating disasters in Michigan. As indicated in the "Major Categories of Debris in Michigan" chart at the beginning of this attachment, many of these debris types will be generated by more than one type of disaster. The magnitude and mix of debris will vary considerably between disasters.

Debris Characteristics for Michigan Disasters

Construction and Demolition (C&D)	
Debris Includes:	Building construction materials (wood, drywall, shingles, flooring, etc.); building contents and personal property (furnishings, clothing, appliances, personal items, vehicles, tires, etc.); utility poles, wires, and equipment (telephone, electric, cable TV, etc.).
Generated From:	Can be present in many disasters. In Michigan, C&D debris occurs primarily with tornadoes, severe storms, floods, wildfires, and ice storms. It may also occur with terrorist attacks that result in physical damage (e.g. bombings).
Considerations:	C&D debris must be evaluated to consider the potential presence of asbestos and other potentially hazardous materials. If recycling is being done, certain materials (e.g., metals, wood, concrete, tires, etc.) can be separated up front from the general C&D debris.
Green Waste (Vegetative Materials)	
Debris Includes:	Trees, limbs, brush, leaves, etc.
Generated From:	Occurs primarily with tornadoes, severe storms, floods, ice storms, widespread plant disease outbreaks, and widespread insect infestations.
Considerations:	Debris within streets must be cleared quickly to allow movement of emergency vehicles. Much of the clean waste can be re-used through grinding, chipping, shredding, composting, etc.
Sediment	
Debris Includes:	Soil, sand, gravel, etc.
Generated From:	Occurs primarily with floods. (Wildfires may cause landslides / mudslides, which can result in considerable sediment debris.)
Considerations:	Sediment can generally be separated and recycled.
Metals	
Debris Includes:	Window frames, sheet metal siding and roofing, cast iron tubs / sinks, railings, mobile home frames, metal parts from cars, metal furnishings (e.g., chairs, tables, file cabinets, etc.), appliances (e.g., washers, dryers, refrigerators, stoves, etc. – also known as "white metals" or "white goods"), bed frames, metal pipes, personal belongings that are metal (e.g., tools, picture frames, etc.).
Generated From:	Occurs primarily with tornadoes, severe storms, floods, wildfires, and terrorist attacks that result in physical damage.
Considerations:	Some metals might be suitable for recycling and should be separated up front. Care must be exercised to ensure that Freon is removed from cooling units of refrigerators and freezers.
Animal Carcasses	
Debris Includes:	Farm animals, wild animals (wildlife), domestic animals.
Generated From:	Occurs primarily with tornadoes, severe storms, floods, and widespread animal disease outbreaks.
Considerations:	Disposal of animal carcasses must be done in accordance with the Bodies of Dead Animals Act (1982 PA 239, as amended). Depending on the circumstances, it may be necessary to work with state / local health officials to develop advisories to protect the health and safety of the public.
Household Hazardous Waste (HHW)	
Debris Includes:	Paints, cleaners, oils, batteries, pesticides, propane tanks, etc.
Generated From:	Occurs primarily with tornadoes, severe storms, floods, wildfires, and terrorist attacks that result in physical damage.
Considerations:	HHW items contain potentially hazardous ingredients that require special care when they are collected, stored, and disposed of. Improper disposal of these wastes can pollute the environment and pose a threat to human health. HHW should be separated at the source and managed separately to avoid contaminating the non-hazardous debris. HHW should be collected using a separate collection process, if possible. Certain types of HHW may have to be hauled to a licensed hazardous waste treatment, storage, or disposal facility in accordance with applicable MDEQ regulations.
Industrial Hazardous Waste (IHW)	
Debris Includes:	Industrial chemicals, paints, solvents, cleaners, oils, fluids, batteries, pesticides, etc.
Generated From:	Occurs primarily with tornadoes, severe storms, floods, wildfires, and terrorist attacks that result in physical damage.
Considerations:	See HHW note above. Most IHW must be hauled to a licensed hazardous waste treatment, storage, or disposal facility in accordance with applicable MDEQ regulations. Certain types of IHW can be extremely hazardous to public health and may pose a danger to public safety as well.

Debris Forecasting Methods and Considerations. Determining the amount and type of debris that will have to be managed is a basic element of the local disaster debris management planning process. An important distinction must be made between "estimating" disaster debris and "forecasting" disaster debris. Quantifying the amount of debris after a disaster is known as "estimating." This is an essential element of the damage / impact assessment process and is discussed in detail in the following MSP/EMHSD Publications: 1) 901 – "Damage Assessment Handbook" (specifically, Attachment G on page 38); and 2) 109a – "Local Disaster Debris Management Planning Handbook" (specifically, the debris tables developed by the U.S. Army Corps of Engineers [USACE] found on pages 66-68). The estimates of debris quantities will be provided to the MSP/EMHSD by affected local jurisdictions as part of their overall damage / incident assessment submitted within E Team on an Incident Report and Jurisdiction Situation Report. If necessary, the Michigan Rapid Impact Assessment Team (MRIAT) can be activated by the MSP/EMHSD to assist affected local jurisdictions in estimating their debris quantities.

Debris "forecasting" involves predicting the amount and type of debris that may occur in each local jurisdiction based on historic disasters and/or mathematical debris forecasting modeling. Debris forecasting helps to define: 1) the anticipated scope, magnitude, and duration of disaster debris management operations; 2) the required response and recovery resources that must be mobilized (including the need for state and federal debris management assistance); 3) the number and size of debris management support facilities that must be established; and 4) the final disposition of disaster debris.

Because Michigan does not have "statewide" disasters such as may occur in coastal states (i.e., major hurricanes) which have relatively predictable impact paths and patterns / levels of destruction, it is difficult if not impossible to accurately forecast disaster debris on a statewide basis. Even the storm events that prompted the need for the "Tree Central" I and II debris management operations in the late 1990s were entirely random in occurrence and would be almost impossible to forecast on a consistent and accurate basis. The debris implications presented in the National Planning Scenarios provide additional guidance, but only two of those scenarios (nuclear detonation and explosives attack) would generate debris due to structural damage. Both scenarios, were they to occur, would almost certainly require some level of state assistance with debris management operations. It is possible to postulate, in general terms, from the scenario information about the types and quantities of debris that would likely be generated. However, it is not possible to make definitive forecasts due to the lack of specificity regarding targeted areas.

As indicated in the "Initiating Disaster Conditions" section earlier in the plan, the incidents most likely to generate significant quantities of debris are natural hazards, and in particular tornadoes / severe storms, floods, wildfires, and ice storms. A multi-jurisdictional incident involving one or more of these natural hazards is the most likely scenario that will require state debris management assistance. This is similar to what occurred in the "Tree Central" I and II operations. Because of the localized nature of the impact areas and impacts from these types of incidents, they are best (and most accurately) forecast at the local level. Local debris forecasts will be based on more accurate historical records and population and land use / geography considerations. Detailed debris forecasting guidance has been provided in MSP/EMHSD Publication 109a – "Local Disaster Debris Management Planning Handbook" to enable counties and municipal emergency management programs to forecast debris quantities. (At the time of this writing, those forecasts had not been completed statewide. However, it is assumed that the majority of the forecasts will be based on a natural hazard "design disaster" as described above.) As those forecasts are completed, the table on the following page will be populated with that data. The collective debris forecasts developed by Michigan's county and municipal emergency management programs will provide the basis for forecasting debris quantities that, in whole or part, will constitute Michigan's "design disaster."

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DEBRIS FORECASTS FOR MICHIGAN COUNTY / MUNICIPAL EMERGENCY MANAGEMENT PROGRAMS

(Based on the forecasting guidance provided in MSP/EMHSD Publication 109a)

County	Population*	Design Disaster Scenario	Debris Forecast (CY)
ALCONA	11,719		
ALGER	9,862		
ALLEGAN	105,665		
ALPENA	31,314		
ANTRIM	23,110		
ARENAC	17,269		
BARAGA	8,746		
BARRY	56,755		
BAY	110,157		
BENZIE	15,998		
BERRIEN	162,453		
BRANCH	45,787		
CALHOUN	137,985		
CASS	51,104		
CHARLEVOIX	26,090		
CHEBOYGAN	26,448		
CHIPPEWA	38,543		
CLARE	31,252		
CLINTON	64,753		
CRAWFORD	14,273		
DELTA	38,520		
DICKINSON	27,472		
EATON	103,655		
EMMET	31,437		
GENESEE	436,141		
GLADWIN	26,023		
GOGEBIC	17,370		
GD TRAVERSE	77,654		
GRATIOT	42,285		
HILLSDALE	46,527		
HOUGHTON	36,016		
HURON	36,079		
INGHAM	279,320		
IONIA	61,518		
IOSCO	27,339		
IRON	13,138		
ISABELLA	63,351		
JACKSON	158,422		
KALAMAZOO	238,603		
KALKASKA	16,571		
KENT	574,335		

(TABLE CONTINUED ON NEXT PAGE)

Notes: *2000 Census

DEBRIS FORECASTS FOR MICHIGAN COUNTY / MUNICIPAL EMERGENCY MANAGEMENT PROGRAMS (cont.)

(Based on the forecasting guidance provided in MSP/EMHSD Publication 109a)

County	Population*	Design Disaster Scenario	Debris Forecast (CY)
KEWEENAW	2,301		
LAKE	11,333		
LAPEER	87,904		
LEELANAU	21,119		
LENAWEE	98,890		
LIVINGSTON	156,951		
LUCE	7,024		
MACKINAC	11,943		
MACOMB	788,149		
MANISTEE	24,527		
MARQUETTE	64,634		
MASON	28,274		
MECOSTA	40,553		
MENOMINEE	25,326		
MIDLAND	82,874		
MISSAUKEE	14,478		
MONROE	145,945		
MONTCALM	61,266		
MONTMORENCY	10,315		
MUSKEGON	170,200		
NEWAYGO	47,874		
OAKLAND	1,194,156		
OCEANA	26,873		
OGEMAW	21,645		
ONTONAGON	7,818		
OSCEOLA	23,197		
OSCODA	9,418		
OTSEGO	23,301		
OTTAWA	238,314		
PRESQUE ISLE	14,411		
ROSCOMMON	25,469		
SAGINAW	210,039		
ST. CLAIR	164,235		
ST. JOSEPH	62,422		
SANILAC	44,547		
SCHOOLCRAFT	8,903		
SHIAWASSEE	71,687		
TUSCOLA	58,266		
VAN BUREN	76,263		
WASHTENAW	322,895		
WAYNE	2,061,162		
WEXFORD	30,484		
TOTALS (COUNTIES):	**9,938,444**		

(TABLE CONTINUED ON NEXT PAGE)

**Notes: ***2000 Census

DEBRIS FORECASTS FOR MICHIGAN COUNTY / MUNICIPAL EMERGENCY MANAGEMENT PROGRAMS (cont.)

(Based on the forecasting guidance provided in MSP/EMHSD Publication 109a)

Municipal Program	Population**	Design Disaster Scenario	Debris Forecast (CY)
ANN ARBOR, CITY	114,024		
BATTLE CREEK, CITY	53,364		
BIRMINGHAM, CITY	19,291		
BLOOMFIELD TOWNSHIP	43,023		
CANTON TOWNSHIP	76,366		
CLINTON TOWNSHIP	95,648		
DEARBORN, CITY	97,775		
DEARBORN HTS., CITY	58,264		
DELTA TOWNSHIP	29,682		
DETROIT, CITY	951,270		
FARMINGTON HILLS, CITY	82,111		
FRASER, CITY	15,297		
GRAND RAPIDS, CITY	197,800		
IONIA, CITY	10,569		
KENTWOOD, CITY	45,255		
LANSING, CITY	119,128		
LINCOLN PARK, CITY	40,008		
LIVONIA, CITY	100,545		
PLYMOUTH TOWNSHIP	27,798		
PORT HURON, CITY	32,338		
ROMULUS, CITY	22,979		
SOUTHFIELD, CITY	78,296		
STERLING HTS., CITY	124,471		
TRENTON, CITY	19,584		
WARREN, CITY	138,247		
TOTAL:			

Notes: **2000 Census. Municipal populations included in county populations in previous tables. These figures are listed for comparative purposes only.

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DEBRIS COLLECTION STRATEGY

A critical action that must occur within the first few hours after the occurrence of a debris generating disaster is the development of a debris collection strategy that addresses the unique situational circumstances of the incident. The debris collection strategy is developed by the Local Debris Manager and Disaster Debris Management Team, with input provided as appropriate by the State Debris Manager and Disaster Debris Management Team. Basic to that strategy is the nature and timing of key debris collection operations. Debris collection operations will normally occur in two phases. Phase I (Debris Clearance) operations will occur during the first 24 to 72 hours after the disaster. Phase II (Debris Removal) operations will occur after the Phase I operations are completed or substantially completed and entail the actual management of accumulated debris. For planning purposes, the following pre-event debris collection strategy has been developed to provide guidance to local and state debris management officials. (This same model strategy is contained in MSP/EMHSD Publication 109a – "Local Disaster Debris Management Planning Handbook.") When the disaster actually occurs, the strategy can be modified as required to address unique incident circumstances such as timing, location, intensity, expected duration, precipitation amounts (as applicable), availability of personnel and equipment resources, damage to priority infrastructure, etc.

Debris Clearance Activities (Phase I Operations – Response). During the first 24 to 72 hours after the disaster, debris activities will emphasize clearing key roads for emergency access by pushing debris to the edge of the right-of-way, rather than restoring roads to pre-event conditions. Phase I activities will also include identifying and removing any obvious debris situations that may pose an immediate threat to public health and safety. (Examples may include dangerously positioned, damaged trees; debris piles that obstruct traffic visibility; fire prone debris piles; debris that prevents access to and/or operation of critical facilities; debris that hampers search and rescue efforts; debris that exacerbates flooding; etc.) Debris clearance and utility restoration activities will be closely coordinated to expedite clearance of utility impacted debris and restoration of services.

Phase I Response Operations will be accomplished by local personnel and equipment, supplemented as required by mutual aid from neighboring jurisdictions, volunteer forces from nongovernmental organizations, or private contractors hired by the affected jurisdiction. In some cases, state debris clearance assistance may be provided by appropriate state agencies (e.g., MDOT, MDMVA, MDOC) upon the declaration of a "state of disaster" or "state of emergency" by the Governor under 1976 PA 390, as amended.

Debris Clearance / Collection Priorities. Phase I Response Operations will focus first on emergency access routes, with particular emphasis on routes used by emergency services. The second priority involves providing access to emergency operations infrastructure, health care facilities, and jails / prisons and other congregate care institutions. The third priority involves the clearance and re-opening of major arterial routes. The fourth priority is other critical infrastructure such as water distribution, wastewater treatment, electric power, gas service, telecommunications, and similar facilities. Other priorities will include routes to shelters, governmental facilities, and major employers, as summarized below:

Debris Clearance / Collection Priorities for Phase I (Response) Operations

1. Fire, police, and ambulance service routes.
2. Access routes to trauma centers, hospitals, and critical care units.
3. Routes to the EOC, emergency supply distribution centers, and other emergency coordinating facilities – including the Disaster Debris Management Center.
4. Routes to jails, prisons, juvenile justice centers, in-patient mental health facilities, and other round-the-clock congregate care institutions.
5. Major arterial routes.
6. Routes to critical infrastructure for utility systems.
7. Routes to shelters used for mass care / sheltering operations.
8. Routes to governmental facilities.
9. Routes to major community employers.
10. Other priorities as deemed appropriate based on incident circumstances.

Background Note: This suggested priority clearance / collection list must be customized to reflect the actual priorities of each jurisdiction. This sample list does not imply in any way that the priorities, as listed, should be adopted by all Michigan jurisdictions. It is provided for illustrative purposes only.

Debris Collection Activities (Phase II Operations – Recovery). This phase entails the actual management of accumulated debris. Phase II may last up to a year or longer and may involve reassessment of debris quantities, operations of debris staging areas, public education, and debris separation, collection, storage, reduction, recycling, and disposal activities. Debris removal activities will begin during the latter part of the incident response phase and will constitute a major part of the incident recovery phase.

Phase II Recovery Operations will be accomplished by local personnel and equipment, supplemented as required by direct and/or technical assistance from the State of Michigan (MSP/EMHSD and/or the State Disaster Debris Management Team), mutual aid from neighboring jurisdictions, volunteer forces from nongovernmental organizations, or private contractors hired by the affected jurisdiction.

The Michigan Department of Environmental Quality will provide technical assistance in the proper handling and disposal of disaster debris throughout the debris management operation. The Attachment titled "Disposal of Disaster Debris" provides background information on Michigan laws and regulations related to the disposal of solid and hazardous waste (including the mass disposal of dead animals). These laws and regulations MUST be followed during the debris management operation. The MDEQ must be included in decision making processes throughout the operation – from start to finish. If the incident involves the mass disposal of dead animals, the Michigan Department of Agriculture and/or Michigan Department of Natural Resources must also be involved. The MDEQ, MDA, and MDNR are all members of the State Disaster Debris Management Team and should be activated / consulted as appropriate for ALL debris management operations. Refer to the Attachment for more specific information.

Public Information for Debris Collection. As indicated earlier in the section titled "Public Information Plan," the State Public Information Officer (SPIO) will work with all involved entities to develop an incident-specific public information plan for the debris management operation. This will normally be done early in the response effort (during Phase I Operations) once the initial debris assessment has determined specifics regarding the nature, scope, magnitude, anticipated duration, etc. of the debris management operation. Refer to that section for more information.

To the extent possible, the pre-scripted public service announcements, press releases, and handbills / door hangers found in the Attachments titled "Sample Public Information Materials – Debris Clearance, Collection, and Sorting" will be modified and used to convey key information to the public about debris collection efforts. This will eliminate (or greatly reduce) the need to develop materials from scratch when time pressures are at their greatest. Early and frequent release of information regarding collection methods, hours of operation, locations of facilities, allowable debris, debris separation requirements, etc. will help ensure greater public cooperation in debris management activities. The public information materials will be disseminated in accordance with the methods identified in the incident-specific public information plan for the debris management operation. The SPIO will work with the State Debris Manager and State Disaster Debris Management Team in the development and dissemination of all public information materials

Collection Methods. The clearance and collection of debris is one of the first tangible signs that the public will see to indicate that the incident recovery is underway and the affected jurisdictions are returning to some semblance of normalcy. The citizens expect to have debris removed from their homes, neighborhoods, schools, and other locations as quickly as possible after the incident occurs. Because of its high profile nature, a well planned, publicized, and managed collection effort is extremely important. In most cases, the collection effort will be the benchmark by which the success or failure of the entire debris management operation is judged.

The debris type, quantities, and urgency will determine which of the two debris collection methods (curbside collection or Collection Centers) will be used. In some cases both methods may be used. The State Debris Manager and State Disaster Debris Management Team will consult early in the incident response (during Phase I Operations) with their local counterparts and other involved entities (including the MDEQ district Waste and Hazardous Materials Division representative), as appropriate, to determine the most prudent collection methods for the incident circumstances.

Curbside Collection. To the extent possible, curbside debris collection will parallel the normal curbside garbage and trash collection operations in the affected jurisdictions. Debris will be placed at the curb or public right-of-way by the affected residents – in accordance with the instructions provided in public information releases – for collection by the designated agencies / companies. Public compliance with the parameters established for the curbside collection effort (as described in the public information releases) will determine the overall effectiveness,

efficiency, and timeliness of this method. Separation of debris into established categories will be particularly important if it is determined that potentially significant recycling / reuse opportunities exist.

If the determination is made that curbside debris separation is not critically important or feasible given the incident circumstances, debris will be picked up curbside in mixed debris piles. This will be convenient for the public but will require the debris to be handled multiple times and will prolong recycling and reduction efforts. It may also increase operational costs.

If debris separation is determined to be appropriate, residents will be directed to sort their debris by material type and place it at the curb / right-of-way in separate piles. Trucks designated for a particular debris type will collect the debris at designated times and deliver it to a designated TDSR Site for reduction or to a recycling / resource recovery facility for recycling / reuse. This method will require more trucks to collect the different types of debris; however, the increased equipment costs will likely be offset by reduced labor costs associated with separating debris by hand. Refer to the "Collecting White Goods" and "Collecting Household Hazardous Waste" sections below for additional considerations regarding curbside collection of those materials.

Collection Centers. If the incident circumstances dictate that Collection Centers be used in lieu of or to supplement curbside collection, residents will be instructed via public information releases where to transport their debris and the types of debris that will be accepted. Collection Centers will normally be used when curbside collection of disaster debris is not feasible due to logistically difficult conditions, cost considerations, a widely dispersed debris pattern, or other reasons as determined by the Local Debris Manager and Disaster Debris Management Team. Depending on incident circumstances, Collection Centers may or may not be part of a designated TDSR Site.

Special Circumstances (Special Needs Populations). Special needs populations such as handicapped individuals, the elderly, persons of ill health, etc., may require assistance in moving their disaster debris to the curbside and/or to Collection Centers. The public information releases will all include a telephone number for the individuals requiring assistance (or their caretakers) to call to arrange for special pick-up at a designated date and time. This service will be provided by the affected local jurisdictions and will be coordinated by the Local Disaster Debris Management Center. Individuals can also make arrangements through local human service agencies, who will then relay the request through the Local Disaster Debris Management Center for follow up service.

Background Note: If non-English speaking populations reside within affected jurisdictions, it will be necessary to release the debris management public information materials in appropriate non-English languages to ensure that all residents are adequately notified of debris management operations and services. Provisions will have to be made to ensure that individuals that take calls for special assistance are functionally literate in (that / those) language(s). These issues will be addressed in local disaster debris management plans, per the guidance provided in MSP/EMHSD Publication 109a – "Local Disaster Debris Management Planning Handbook." Upon request, the MSP/EMHSD can assist in arranging for language translation technical assistance through the SEOC.

Collecting White Goods. The collection of "white goods" (e.g., washers, dryers, refrigerators, stoves, etc.) will be done separately from other debris types because 1) there are significant recycling opportunities for these metals, and 2) they may contain refrigerants and other machine fluids that must be reclaimed by certified technicians and disposed of at a permitted facility. In most cases, white goods will be collected curbside and manually placed on trucks so as not to cause undue damage to the elements that contain refrigerants or oils. White goods will also be collected at Collection Centers (if used), but only as a secondary means of collection. Curbside collection will be the primary means of collecting white goods in most incidents.

The white goods will be collected by local personnel (force account, contracted, and/or volunteer) in accordance with an established collection schedule. The collection schedule will be widely publicized in the public information releases for the debris management operation. In most cases, at least two and possibly three passes will be made through the affected areas to collect white goods.

The MDEQ will assist in identifying recycling facilities that recycle white goods damaged or destroyed in a disaster.

Collecting Household Hazardous Waste. Household hazardous waste (HHW) will also be collected separately to avoid contaminating other debris types and to protect the health and safety of all parties involved in the collection operation. If HHW is mixed with other debris types, the entire load will be contaminated and will have to be disposed of at a licensed hazardous waste treatment, storage or disposal facility in accordance with MEDQ requirements under the Natural Resources and Environmental Protection Act (1994 PA 451, as amended). This will result in significantly higher disposal costs.

Household hazardous waste will primarily be collected curbside by a locally-contracted, licensed HHW hauler / facility. The HHW hauler / facility will collect, store, treat, and dispose of the disaster-generated HHW. The collection schedule will be widely publicized in the public information releases for the debris management operation. A description will be included in those releases, detailing what constitutes HHW. In most cases, at least two and possibly three passes will be made through the affected areas to collect disaster-generated HHW. If a regularly scheduled HHW "drive / round-up" will occur shortly after the disaster, that event will also be used to collect disaster-generated HHW. Public information releases will reflect this additional collection opportunity.

Household hazardous waste will also be collected at Collection Centers (if used), but only as a secondary means of collection. Separate areas will be established for the temporary storage of the HHW based on recommendations from MDEQ Waste and Hazardous Materials Division staff, FEMA staff (if involved), the State Debris Manager and Disaster Debris Management Team, and other involved agencies as appropriate. These areas will be carefully monitored by the Collection Center staff and district MDEQ Waste and Hazardous Materials Division staff to ensure proper waste segregation and safe storage and handling practices. The HHW will be collected by a locally-contracted, licensed HHW hauler / facility and properly disposed of in accordance with MDEQ requirements.

Staffing for Curbside Collection Operations. Curbside collection will be accomplished primarily by local personnel (force account, contracted, and/or volunteer) in accordance with an established collection schedule. Staffing levels will be determined by the Local Disaster Debris Management Center based on the nature, scope, magnitude, and anticipated duration of the debris management operation. As indicated above, white goods and HHW will be handled in separate collection efforts. The Local Disaster Debris Management Center / EOC will oversee and monitor the implementation of the curbside collection operation, in conjunction with district MDEQ Waste and Hazardous Materials Division staff.

Staffing for Collection Centers. Collection Centers will be operated primarily by local personnel (force account, contracted, and/or volunteer). Each Collection Center will have a minimum of four staff persons – one to inspect incoming loads, one to direct and monitor unloading activities and traffic, one to resolve site-specific issues ("troubleshoot") and monitor HHW, and one to document site-specific information (e.g., number of loads, status of collection efforts, problems encountered, etc.) for E Team entry. As indicated above, white goods and HHW will also be collected at Collection Centers, but only as a secondary means of collection. (Curbside will remain the primary means of collection.) White goods will be collected from Collection Centers by local personnel (force account, contracted, and/or volunteer). Household hazardous waste will be collected from Collection Centers by a locally-contracted, licensed HHW hauler / facility. The Local Disaster Debris Management Center / EOC will oversee and monitor the implementation of the Collection Centers, in conjunction with district MDEQ Waste and Hazardous Materials Division staff.

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TEMPORARY DEBRIS STORAGE AND REDUCTION SITES

Locations. Potential TDSR Sites have been pre-identified in this plan, by MSP/EMHSD district, based on input provided by local emergency management programs. Refer to the Attachment titled "Pre-Identified Debris Management Facilities – by MSP/EMHSD District" for a listing and corresponding map of these site locations. Each counterpart local debris management plan may have additional TDSR Sites pre-identified as well. (MSP/'EMHSD Publication 109a – "Local Disaster Debris Management Planning Handbook" calls for each local emergency management program to provide a listing, map, and aerial photographs of pre-identified TDSR Sites.) Based on the incident circumstances, a TDSR Site (or set of sites) will be designated for each incident that requires a debris management operation. The TDSR Site(s) selected for a particular operation will be based on a number of factors, including but limited to:

- The types, quantities, and locations of the debris;
- The ability of the site to handle the expected volume of debris;
- The expected duration of debris storage and reduction activities;
- The time of year in which debris storage and reduction activities will occur;
- Whether or not the TDSR Site will also function as a Collection Center;
- The opportunities for greater operational efficiency due to location, site size, ingress / egress routes, etc.;
- The impacts (if any) on other site uses;
- The potential environmental impacts based on debris type and/or volume;
- The surrounding land uses; and
- The proximity of the site to final disposal facilities (i.e., landfills, recycling / resource recovery facilities).

The Local Debris Manager and Disaster Debris Management Team will determine which TDSR Site(s) will be used for each incident. This decision will be made early in the incident response (during Phase I Operations). The decision will be based in part on consultations with MDEQ Waste and Hazardous Materials Division district staff, the State Debris Manager and Disaster Debris Management Team, FEMA (if involved), the MDA and/or MDNR (if involved due to dead animal debris), and other involved agencies as appropriate. Once the TDSR Site(s) has/have been selected, the location(s) and site-specific information will be disseminated to all involved parties by public information officials as quickly as possible. The public will be notified of these locations via all appropriate means, as specified in the incident-specific Public Information Plan.

Permits. The TDSR Site(s) selected will have to comply with all applicable local codes, ordinances, and regulations related to environmental protection, land use / land development, and construction activities. These will be identified in counterpart local debris management plans, in accordance with the guidance provided in MSP/EMHSD Publication 109a – "Local Disaster Debris Management Planning Handbook." Any required local permits must be obtained prior to the establishment of the TDSR Sites and the commencement of debris storage and reduction activities at those sites, **OR** the local permit requirements must be waived by the appropriate governmental body that is empowered to make such waivers.

In addition, the TDSR Site(s) must also be in compliance with applicable state and federal environmental laws and regulations under the stewardship of the MDEQ Waste and Hazardous Materials Division. Despite their emergency nature, disaster debris management activities and operations must be approved by the district MDEQ Waste and Hazardous Materials Division staff PRIOR to their commencement to ensure full compliance and to avoid environmental problems down the line. The MDEQ Waste and Hazardous Materials Division is the State's steward agency for the regulation of waste management sites and activities and should be involved THROUGHOUT the debris management operation – from start to final close-out – to ensure compliance with the Michigan Natural Resources and Environmental Protection Act (1994 PA 451, as amended) and other pertinent laws and regulations. The Local and State Debris Managers and Disaster Debris Management Teams will involve the appropriate MDEQ staff (and MDA and/or MDNR staff if dead animal debris occurs) in debris management operational planning right from the start of the response (Phase I Operations) effort. Refer to the Attachment titled "Disposal of Disaster Debris" for a comprehensive synopsis of the various environmental regulatory compliance requirements that must be met during disaster debris management operations.

Determination of Debris Quantities / Storage Requirements. Determination of likely debris quantities and storage requirements will be accomplished by a combination of the pre-incident debris forecast developed in the Attachment titled "Debris Categories and Forecasting" as well as the trans- and post-incident debris estimates that are developed by local damage assessment teams. Since the statewide debris forecast is based on the "design

disasters" identified in counterpart local debris management plans, it should provide a workable "upper limit" for determining the potential debris quantities and storage requirements. The debris estimates that are developed during the damage assessment process will validate (or not validate) that debris forecast. If the debris estimates indicate that more debris has occurred than was expected, the quantities and storage requirements will be increased accordingly. If sufficient capacity is not available, the affected jurisdiction will need to make other plans, which can include the following:

- Expanding existing recycling, processing, or disposal facilities to handle the increased demand;
- Hauling to intermediate sites and reducing the amount of debris through recycling and other measures;
- Designating a temporary storage area at a landfill, vacant lot, etc. for recycling operations; and
- Establishing new recycling / processing facilities.

Conversely, if the trans- and post-incident debris estimates indicate that less debris has occurred than was planned for in the design disaster then the requirements will be decreased accordingly. These decisions will have significant impacts on the type and amount of resources (i.e., personnel, equipment, materials, and support facilities) that will be required in the debris management operation – and especially in the debris collection, storage, and reduction aspects of the operation.

The State Debris Manager / State Disaster Debris Management Team may be requested to provide technical assistance to affected jurisdictions in determining the need for, and location of, supplemental debris storage and disposal facilities. Such a request for assistance would likely be submitted to the MSP/EMHSD through the SEOC E Team system as specified in MSP/EMHSD Publication 901 – "Damage Assessment Handbook."

Determination of debris storage requirements at TDSR Sites will be based on the following formulas provided by FEMA and the USACE in FEMA Publication 325 – "Debris Management Guide":

Estimate the debris pile stack height at 10 feet.

Only 60% of the land area at the TDSR Site will be available for storage; the remaining 40% must be used for roads, safety buffers, burn pits, and Household Hazardous Waste (HHW) areas.

1 acre (AC) = 4,840 square yards (SY)
10-foot stack height = 3.33 yards (Y)
Total volume per acre = 4,840 SY/AC x 3.33 Y = 16,117 cubic yards per acre (CY/AC)

To determine needed acreage: CY debris / 16,117 CY/AC = debris acres required.

To provide for roads, buffers, burn pits, etc.: debris acres x 1.66 = total acres required, OR debris acres / 60% (.60) = total acres required; the answers will be roughly equal. (It is acceptable to use either one, or to split the difference.)

Comparison: one square mile = 640 acres.

To determine the number of square miles required: total acres (AC) / 640 acres per square mile (AC/SM) = square miles (SM) of land required for TDSR Sites.

The USACE has found that a 100-acre TDSR Site can be cycled every 45 to 60 days or one time during the recovery period; therefore, the total acres (AC) / 2 (if cycled once, then the site can be filled twice during the recovery period) = number of acres required for TDSR Sites when the reduction rate is taken into account.

This provides the number of acres required. The number of TDSR Sites will vary depending on site size, the distance from debris sources, the speed of reduction (mixed debris is slower than clean woody debris), and the removal urgency.

Establishment and Operation of Temporary Debris Storage and Reduction (TDSR) Sites. Once debris is removed from the damaged areas, it will be taken to TDSR Sites identified by the affected local jurisdiction in its debris management plan**.** Removal and disposal actions should be handled at the lowest level possible based on the magnitude of the disaster, i.e., local level, county level, state level. When resources are exceeded at each of those levels, federal assistance may be requested under the Stafford Act. Because of limited debris removal,

reduction, and disposal resources at the local, county, and state levels, the establishment and operation of TDSR Sites is generally accomplished by contracting with private debris management companies.

(Note: Ideally, TDSR Sites will be located near the source of debris and the ultimate disposal site to cut down on transportation costs and travel time, and to minimize disruptions to the community. It is the responsibility of the affected local jurisdiction to identify and establish TDSR Sites, based on its debris management plan. When the MSP/EMHSD and State Disaster Debris Management Team become involved in the management of the debris operation, they will assist the local jurisdiction (as required) in locating and establishing TDSR Sites. These sites should be located on property owned by the jurisdiction, but in some cases it may be necessary to lease private property. In extreme cases where no suitable local / private sites are available, the MSP/EMHSD and State Disaster Debris Management Team may seek to use available state owned land and/or facilities as TDSR Sites. This will only be done as a **last resort** and only if the debris operation will not preclude the intended use of the site or otherwise adversely impact its normal operations. In those instances, the MSP/EMHSD and State Disaster Debris Management Team will work closely with the Michigan Department of Management and Budget and/or the steward state agency for the site to develop appropriate procedures for site usage and restoration – to include a timeline for closure of the site and full site restoration.)

Each TDSR Site will eventually be emptied of all debris and restored to its previous condition and use. If contractors are used to operate TDSR Sites, they must work closely with the Local / State Debris Managers and Disaster Debris Management Teams to ensure that all sites are properly restored. Site restoration will go smoothly if baseline data are properly collected and site operation procedures are followed. The following guidelines should be considered when collecting baseline data for and operating TDSR Sites:

Baseline Data Collection.

- **Video tape and photograph the site** (ground and/or aerial) before activities begin, and then periodically update the video and photographic documentation to track site evolution.

- **Document physical features,** noting the location and condition of existing structures, fences, culverts, irrigation systems, pavement, etc. Document any hazards at the site that were removed prior to the start of operations.

- As appropriate, **sample soil and groundwater.** Take random soil and groundwater samples prior to volume reduction activities, and then conduct continuous groundwater sampling after operations commence. Sample designated household hazardous waste, ash, and fuel storage areas prior to site setup. Contact the county environmental agency and the MDEQ to determine regulatory requirements, chain of custody requirements, acceptable collection methods, certified laboratories, and test parameters.

- **Geo-locate the site** (latitude / longitude) and enter this data in a Geographic Information System to produce a map of the site location.

- **Sketch / map site activity locations** so that areas of concern can be pinpointed later for additional sampling.

- **Document contractor operations** that will have a bearing on site close-out, such as: 1) petroleum spills at fueling sites; 2) hydraulic fluid spills at equipment breakdowns; 3) contractor installation of water wells for pile cooling or dust control; and 4) household hazardous waste storage and disposal.

- **Plan environmental remediation actions** as early as possible with the landowner. Plan for cleanup, landscape restoration, and making necessary repairs. Come to an agreement with the landowner prior to occupancy to establish reasonable expectations of site conditions upon site close-out. (Final restoration of the landscape must be acceptable to the landowner.)

Site Operations. Monitoring and management of TDSR Site operations is the responsibility of local debris management officials. The MSP/EMHSD and/or State Disaster Debris Management Team will provide assistance when required, but the basic responsibility of monitoring and managing the TDSR Sites rests with local officials. In most cases, debris volume reduction will be carried out by a combination of local government forces and private contractors. In rare cases, debris volume reduction will be accomplished exclusively by local government forces. State agency personnel normally will not particpate in long-term debris volume reduction activities at TDSR Sites.

(This includes the use of prison inmate labor.) The MSP/EMHSD and/or State Disaster Debris Management Team will arrange for appropriate technical assistance from state agencies to aid the local jurisdiction in managing and monitoring TDSR Site operations.

Following are basic operational considerations for TDSR Sites:

- Clear the site of potential work hazards BEFORE operations begin. This should be noted in the baseline data report as indicated above.

- Provide site security / monitoring personnel to oversee operations, solve problems as they arise, and prevent the dumping of unwanted debris by outsiders.

- Provide adequate buffers around debris piles to abate co-mingling of materials, smoke, dust, noise, traffic, fire danger, etc.

- Ensure that interior roads and ingress / egress routes are capable of being used in all weather conditions.

- If the site is dirt, it may be necessary to periodically spray it with water to cut down on dust.

- Ensure that local residents / businesses around the sites are adequately informed of site operations (e.g., working hours, potential noise / dust concerns, ingress / egress routes by trucks, anticipated duration of operations, etc.) through public information releases and/or door-to-door information distribution. (This may cut down on the number of complaints by local residents.)

- Perform as much debris volume reduction as possible at the TDSR Sites. It is impractical (and expensive) to do large-scale debris volume reduction at remote sites. Instead, the debris should be hauled to the TDSR Sites for reduction on a mass-scale.

- Temporary storage areas for the following should have impervious liners to prevent contamination of soil and groundwater: 1) ash piles; 2) household hazardous waste; 3) fuels / hydraulic fluids; 4) generators; and 5) mobile lighting plants.

- Any permits that may be required to bring in large / oversized equipment are the responsibility of the local jurisdiction. The MSP/EMHSD may be able to provide technical assistance with this through the MDOT.

- Contracts should include clauses that require contractors to immediately cleanup spills at the site, and to immediately cleanup and restore the site at the conclusion of storage / volume reduction activities.

- Provide a site for local residents / businesses to retreive wood, wood chips, etc. for reuse.

- Debris removal / disposal should be viewed as a multi-staged operation with continuous volume reduction. Debris should be constantly flowing to burners and grinders / shredders, or recycled with the residue and mixed construction and demolition materials going to approved landfills. (Significant accumulation of debris at the site should be minimized.)

Volume Reduction Methods. Following are basic operational considerations for debris volume reduction activities at TDSR Sites. Because each site and operation are different, these should be viewed as general guidelines. A specific operational plan should be developed for each TDSR Site based on the actual materials that are being stockpiled and reduced, and the reduction methods to be employed.

Burning

Burning can reduce disaster debris volume by 95%, with 5% ash residue. Primary burning methods include: 1) open burning; 2) air curtain pit burning; and 3) portable air curtain incineration.

Environmental Regulations. In general, open air burning on a large scale is not allowed in Michigan under the Natural Resources and Environmental Protection Act (1994 PA 451), Parts 55 (Air Pollution Control), 115 (Solid Waste Management), and 515 (Forest Fire Prevention). However, when Gubernatorially-declared disasters or emergencies occur, the MDEQ may (in some cases) allow burning of certain types of disaster debris in order to provide for the rapid reduction of material volume to protect public health and safety. As soon as the need to

reduce debris volume through burning is identified, the MSP/EMHSD will work with the MDEQ and the affected local jurisdictions to determine the specific requirements (i.e., locations, scope and magnitude, safety provisions, etc.) of allowable burning operations. In most cases, a Governor's Executive Order (Emergency Waiver) will be developed by the MSP/EMHSD and the MDEQ, specifying the need to temporarily allow for open air (controlled) burning of disaster debris and the duration of burning operations.

As an alternative to open air burning, volume reduction may also be achieved through air curtain pit burning and the use of portable air curtain incinerators. These are specialized types of burn operations that require equipment that is available through private debris disposal contractors. If the need for such equipment is identified, the MSP/EMHSD will work with the MDEQ and the affected local jurisdictions to obtain, place, and set up burn operations using these resources.

Clockwise, from upper left: Debris pile prior to volume reduction; open air, controlled burn pile; air curtain burner; portable incinerator; air monitoring equipment at burn site; open air, controlled burn pit.

Air Curtain Pit Burning. Air curtain pit burning offers an effective means to expedite the volume reduction process while substantially reducing the environmental concerns caused by open burning. The air curtain burning method incorporates a pit constructed by digging below grade or building above grade (if a high water table exists) and a blower unit. The blower unit and pit make up an engineered system that must be precisely configured to properly function. The blower unit must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below.

There are no "industrial standards" for air curtain burner operations. Specifications have to be customized using the information provided by the manufacturer and should include such items as minimum blower air velocity, pit construction configuration, pit materials, ash handling, acceptable smoke levels, and air monitoring requirements. Pits must be constructed out of a highly compatible material that will hold its shape. In many cases, compacted limestone fill is placed over an impervious clay layer to prevent contamination of the groundwater. The water table elevation governs whether the pit is constructed above or below ground.

Portable Air Curtain Incinerators. Portable incinerators use the same methods as air curtain pit systems. The only difference is that portable incinerators utilize a pre-manufactured pit in lieu of an onsite constructed earth / limestone pit. Portable air curtain incinerators are the most efficient burning systems available. Pre-manufactured pits are engineered to precise dimensions to complement the blower system, and they require little or no maintenance as compared to earth or limestone constructed pits. Portable incinerators are particularly suited for areas with high water tables and sandy soils, and areas where smoke opacity (visual measure of smoke) must be kept to a minimum.

Portable incinerators use air curtain blowers that deliver air at predetermined velocities and capacities. The air traps smoke and small particles and recirculates them to enhance combustion, which reaches over 2,500 degrees

Fahrenheit. Portable incinerators can have combustion rates of about 25 tons per hour, while still meeting emission standards.

Burnable Debris. Burnable debris is generally limited to: 1) vegetative materials (green waste) such as trees, limbs, and brush; and 2) burnable C&D materials such as non-creosote structural timber and other wood products. Non-burnable C&D debris includes, but is not limited to, creosote timber, plastic, glass, rubber and metal products, sheet rock, roofing shingles, carpet, tiers, and other materials as may be designated by the MDEQ. Garbage is considered non-burnable debris.

Environmental Controls for Burning Operations. The following general controls are recommended for all burning methods and should be employed at all burn sites (unless the MDEQ requires more strict provisions):

- A setback of at least 100 feet should be maintained between the debris piles and the burn area.
- If possible, a 1,000-foot distance should be maintained between the burn area and the nearest building.
- Fencing and warning signs should be used to keep the public away from the burn area.
- The fire should be extinguished approximately two hours before the anticipated removal of the ash mound.
- The ash mound should be removed when it reaches two feet below the lip of the burn pit.
- The burn pit should be constructed either above ground or below ground so that it is less than eight feet wide and between nine and 14 feet deep.
- The burn pits should be constructed with limestone and reinforced with earth anchors or wire mesh in order to support the weight of the loaders.
- There should be a one-foot impervious layer of clay or limestone on the bottom of the pit to seal the ash from the aquifer.
- The ends of the pits should be sealed with dirt or ash to a height of four feet.
- A 12-inch dirt seal should be placed on the lip of the burn pit area to seal the blower nozzle. The nozzle should be three to six inches from the end of the pit.
- There should be one-foot high nonflammable warning stops along the edge of the pit's length to prevent the loader from damaging the lip of the burn pit.
- To prevent contained explosions, hazardous or contaminated flammable material should not be placed in the pit.
- The air flow should hit the wall of the pit about two feet below the top edge of the pit, opposite the blower, and the debris should not break the path of the air flow except during dumping.
- The pit should be no longer than the length of the blower system and should be loaded uniformly along the length.
- The recommended opacity (visual measure of smoke) requirements should be set at 15% for 50 minutes out of an hour, not to exceed 40% for the remaining 10 minutes.
- A 30 minute start-up time with a maximum of 40% opacity should be allowed.

Ash, Soil and Groundwater Testing. Ash, soil and groundwater may need to be tested to determine that no long-term environmental contamination is left on the site. High levels of site activity may require additional testing and contaminated material may need to be disposed of in an approved landfill.

<u>Ash Testing</u>. All ash piles should be tested using the Toxicity Characteristic Leaching Procedure. One composite sample from each separate ash pile should be analyzed. A minimum of ten samples taken from different strata

within the pile is appropriate to develop a composite sample. If unacceptable contamination is not found, ash may be placed in a Class I landfill. In some cases, the ash residue can be recycled as a soil additive. If unacceptable levels of contamination are detected, the material should be further evaluated, and if appropriate placed in a hazardous waste landfill.

Soil Testing. After the debris piles are removed from the site, soils should be tested for the presence of volatile hyrdrocarbon contamination. Samples should be taken immediately below the surface, if it is determined that the contractor spilled hazardous materials, such as oil or diesel fuel, on the site. The entire incineration site should be inspected for any areas of discoloration, odor, or obvious problems. Such areas should be identified and restored as necessary.

Groundwater Testing. Runoff from the incineration sites and other debris stockpiled within storage areas have the potential to contaminate the aquifer. Although the probability of contamination is low, consideration should be given to placing ground water monitoring wells around the perimeter of the site if it is adjacent to an important aquifer. Groundwater should be tested to determine the probable effects of rainfall leaching through either the ash areas or the stockpile areas and be compared to generally accepted water quality standards.

Grinding / Chipping / Shredding

Volume reduction by grinding, chipping, and shredding can be used for clean vegetative debris (green waste) that is free of contaminants such as nails, spikes, wire, etc. This method will reduce volume by 75% (4 cubic yards reduced to 1 cubic yard). To be feasible, the 25% residue must have some benefit or use, such as:

- Wood chips / mulch for parks and recreation areas, trails, play areas, home landscaping, etc.;
- Commercial resale by landscape firms / contractors;
- Industrial heating (co-generation);
- Agricultural uses (soil enhancement); or
- Simply a reduction in the amount of material to be landfilled.

The State / Local Disaster Debris Management Teams will attempt to work with local environmental and agricultural groups, landscape contractors, co-generation plants, and the affected local communities to determine if there are viable markets for the resulting wood chips and mulch. If such markets cannot be found, the materials will simply be shipped to a landfill for ultimate disposal.

Mulch Specifications. The ultimate end use of the material will dictate the size specifications for mulch. If the grinding operation is strictly for volume reduction, then the size is not important. Mulch used for agricultural purposes must be free of paper, plastic, and dirt (10% or less contamination) and the wood chips produced should not exceed 4 inches in length and ½ inch in diameter. Plastics should be eliminated completely if at all possible.

Mulch Production. Because of their high volume reduction capacity, tub grinders are ideal for use at TDSR Sites. Locating the grinders on the site is critical from a noise and safety point of view. Tub grinders require large buffer zones (100-300 feet or more, depending on grinder size and surrounding land uses) as well as a large area to hold the resulting mulch and an all-weather road to provide for adequate ingress and egress. Root rake loaders should be used to feed or crowd materials to the grapples. (Bucket loaders tend to scoop up earth, causing excessive wear to the grinder and unwanted dirt contamination.) Hand laborers should remove all contaminants prior to feeding the grinders. Shaker screens should be used when processing stumps with root balls or when large amounts of soil are present in the woody debris. (The separated soil can be recycled back for agricultural uses.)

As a general rule, production output should average 100 to 150 cubic yards per hour when debris is moderately contaminated (such as may be found in an urban setting) and feeding operations are slow. For relatively clean debris, production output should average 200 to 250 cubic yards per hour. For safety and efficiency, mulch piles should be no higher than 15 deet and located so as not to hinder hauling operations.

Brush chippers are ideal for small scale use in residential areas, orchards, small parks, or similar areas. Chipping at these smaller sites will reduce overall costs since the vegetative debris will not have to be transported twice. However, brush chippers require several personnel to feed material into the machinery and to monitor the site for safety and security purposes.

L-R: Tub grinders and brush chipper being loaded with material to be mulched. Tub grinders are suitable for use at TDSR Sites, while brush chippers are more appropriate for smaller sites.

Recycling

The State / Local Disaster Debris Management Teams must decide relatively early in the debris removal and disposal operation whether or not to consider widescale recycling, since it may present an opportunity to reuse resources and to reduce the overall cost of the operation. Metals, wood, and soils usually offer excellent recycling opportunities. In some cases, widescale recycling operations may be contracted out to achieve an economic return from some of the contractors that take the initiative to segregate and recycle debris as it arrives at the TDSR Sites. Specialized contractors may also be available to bid on disposal of debris by recycling if it is well sorted.

The best chance for recycling success starts with a vigorous public information campaign early in the debris clearance and removal operation. (Refer to the "Sample Press Release / Public Service Announcements" Attachment for examples of pre-scripted public information materials that can be used in the public information campaign.) Encouraging homeowners and business owners to separate their debris by type and to place it at curbside for scheduled pickups is probably the most important step that can be taken to ensure that recycling is a viable debris reduction option. It is also possible to separate debris as it arrives at the TDSR Sites, but it is much more efficient to have it pre-sorted and ready for pickup by local debris crews or recycling contractors.

The State Disaster Debris Management Team can provide technical assistance to the Local Disaster Debris Management Team(s) in identifying available user markets for the various recyclable materials. The MSP/EMHSD will work closely with the MDEQ in this effort. The MDEQ's "Michigan Recycled Materials Market Directory (MRMMD)" may be helpful in finding markets for recyclable materials. This directory includes listings for processors, collectors, and brokers of reclaimable materials in the following categories:

- DRUMS / BARRELS, (fiber, metal and plastic pails, buckets and totes);
- GLASS, (jars, bottles, windows, light bulbs, fluorescent bulbs, etc.);
- METALS, (iron, steel, copper, aluminum, zinc, etc.);
- OILS / SOLVENTS, (antifreeze, used oil and filters, solvents, wipes, industrial oils, etc.);
- PAPER, (newsprint, office paper, magazines, corrugated containers, etc.);
- PLASTICS, (polyethylene, PET, polypropylene, thermoplastics, #1-7, etc.);
- PALLETS / WOOD / YARD CLIPPINGS, (pallets, construction and demolition debris, etc.); and
- MISCELLANEOUS, (scrap tires; dry cell batteries; lead acid batteries; office equipment including computers, electronics, and toner cartridges; textiles, etc.).

Vegetative Material. Vegetative material (green waste) can be recycled in the form of chips / mulch (products of grinding / chipping / shredding, as described above), through log salvage contractors that recycle useable timber resources, or through firewood retailers that will cut up and sell downed trees and limbs. Log salvagers and firewood retailers are fairly selective in what they will use (typically only clean logs), so the remaining vegetative material will have to be reduced into chips / mulch for reuse or eventual disposal in a landfill.

Metals. Most ferrous (metals that contain iron) and non-ferrous metals are suitable for recycling. Metal maulers can be used to shred such metal debris as mobile home frames, automobile parts, appliances, metal siding / roofing, metal signs, etc. Ferrous and non-ferrous metals can be separated using an electromagnet and then sold to metal recycling firms. Metal recycling operations are generally more efficient if the metals are separated from the general C&D debris prior to being stockpiled; however, widespread metal recycling can still be accomplished even if initial source separation does not occur.

Soil. Cleanup operations using large pieces of equipment typically pick up large amounts of soil. The soil is transported to the TDSR Sites where it is combined with other organic materials that will decompose over time. Large amounts of soil can be recovered if the material is put through a screen or shaker system. This procedure can produce significant amounts of soil that can be stored onsite until it is sold or recycled back to the agricultural community, used to fill in low land, or used in the site restoration. It is generally more expensive to transport and pay tipping fees at local landfills that to sort out the heavy dirt before moving the material, so soil recycling makes sense both environmentally and economically.

L-R: metal debris can be separated for recycling; log salvagers can help reduce the volume of vegetative debris to reduce and dispose of; metal applicances can also be recycled.

Other General Layout Considerations for Debris Volume Reduction Activities. The following general guidelines should be considered in developing the layout of the various debris reduction areas within TDSR Sites:

- Sites should be located outside of identifiable or known floodplain and flood prone areas. Consult the Flood Insurance Rate Map (FIRM) for the location to verify these areas. Any doubts about the suitability of the site location with regard to floodplains / flood prone areas should be directed to the MDEQ for verification and general approval.

- Sites that have identified wetlands should be avoided if at all possible. If wetlands exist or wetland features appear at a potential site, verification by the MDEQ or local Corps of Engineers office will be necessary to delineate areas of concern. Once these areas are delineated, they should be flagged and a 100-foot buffer zone should be maintained for all activities ongoing at the site.

- Storage areas for C&D debris should be at least 100 feet from: 1) all surface waters of the state (which include, but are not limited to, small creeks, streams, watercourses, ditches that maintain seasonal groundwater levels, ponds, wetlands, etc.); 2) site property boundaries; 3) onsite buildings / structures; and 4) septic tanks with leach fields.

- Storage areas for C&D debris should also be at least 250 feet from: 1) off site residential, commercial, and public structures; and 2) potable water supply wells.

- Material separated from incoming C&D debris (e.g., white goods, scrap metal, etc.) should be at least 100 feet from site property lines. Other non-transferable C&D debris (e.g., household garbage, larger containers of liquid, household hazardous waste, etc.) should be transported to appropriate landfill facilities as soon as possible.

- It may be desirable to construct an elevated platform at the TDSR Site ingress gate / inspection station to allow for easy visual inspection of the debris loads of incoming trucks. If a platform cannot be constructed, it is also possible to use temporary scaffolding, a mechanical platform, or even ladders to view the load contents.

The "Possible Layout for Temporary Debris Storage and Reduction Site" diagram found on page 77 is intended to provide very generalized guidance for designing the various debris storage and volume reduction activities at a hypothetical 35-acre TDSR Site. The actual layout of each TDSR Site must be customized to address the unique size, environmental, and debris content considerations that are present at each site. This diagram simply provides a model for starting that site design process.

L-R, Top Row: TDSR Site inspection station temporary viewing platforms (mechanical and constructed); inspection station without viewing platform (using pickup truck as a base); **Middle Row:** aerial view of TDSR Site for burning operations with adequate buffer zones around the perimeter; piles of C&D debris waiting to be processed and then disposed of; **Bottom Row:** unsorted debris piles along roadways make recycling efforts more difficult – but not impossible; fires are always a threat at TDSR Sites, making adequate ingress / egress and roadways critically important for fire suppression purposes.

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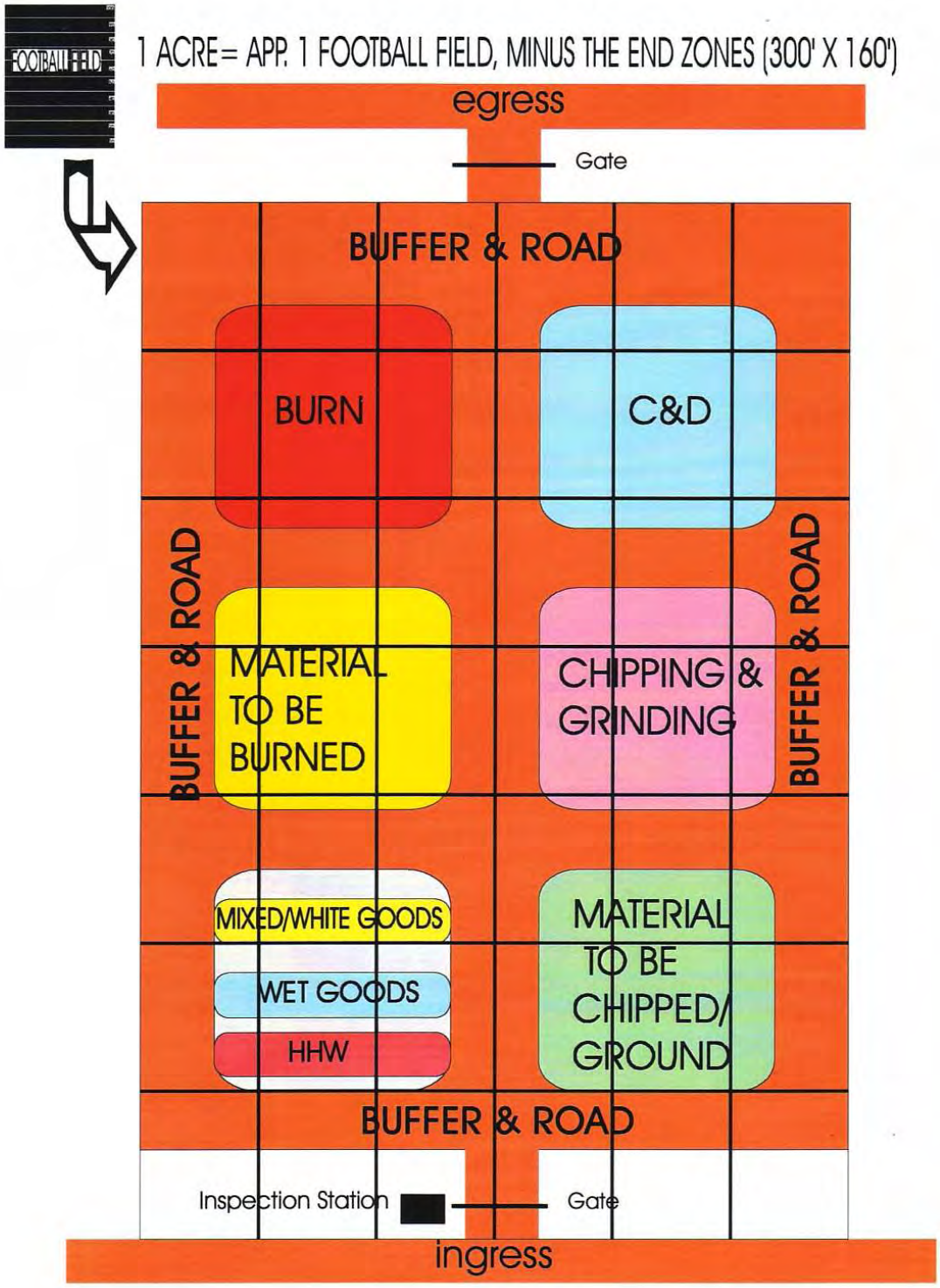
POSSIBLE LAYOUT FOR TEMPORARY DEBRIS STORAGE AND REDUCTION SITE



HYPOTHETHICAL 35 ACRE STORAGE SITE

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DEBRIS MANAGEMENT PHASES: PLANNING AND OPERATIONAL CONSIDERATIONS

Debris Management Phase	Primary Considerations (for MSP/EMHSD and local jurisdictions)
NORMAL OPERATIONS (prior to a debris generating disaster)	• Designate a Debris Manager; • Establish and train a Debris Management Team; • Designate and equip a Debris Management Center; • Develop / review / update (as appropriate) a debris management plan as a support plan or appendix / annex to the applicable emergency operations plan (state, local, regional). The local / regional plan should be based on guidance provided by the MSP/EMHSD and should address the following critical areas: a) List of members (with contact information) and task assignments for the Debris Management Team; b) List of qualified debris removal / disposal contractors; c) Sample contracts (include time and material, unit price, and lump sum sample contracts with generic scopes of work); d) Sample right-of-entry / hold harmless agreements (indemnifying all levels of government against potential claims from conducting work on private property); e) Sample public information releases; f) Establishment of a debris assessment process to define the scope of the problem; g) Identification of critical routes and facilities for priority debris removal; h) Establishment of a process for debris removal from other public and private properties (priorities for removal will be determined during the response phase); i) Identification of Temporary Debris Storage and Reduction (TDSR) Sites and Staging Areas; j) Compliance with environmental and other regulatory requirements (local, state, and federal); k) Documentation requirements for debris management activities (for cost reimbursement, legal protection, regulatory requirements, historical records, plan updates, etc.). At a minimum, the following must be documented: - Labor, equipment, rental fees, and material costs - Mutual aid agreement costs - Use of volunteer resources, including labor - Administrative costs - Disposal costs - Types of debris collected and quantities of each type (Note: The MSP/EMHSD is the central coordinating agency for debris management functions at the state level, in accordance with the Michigan Emergency Management Plan. In that role, it will help facilitate the development of debris management plans and debris management capability at the local jurisdiction level through planning guidance, training, information sharing, and the provision of technical assistance.)
↓	↓
INCREASED READINESS (a potential debris generating disaster is approaching / imminent)	• Alert the Debris Management Team and others involved in the debris management operation; • Place the Debris Management Center and identified TDSR Sites and Staging Areas on standby for possible activation; • Review (and update as required) applicable aspects of the debris management plan, including contracts and right-of-entry / hold harmless agreements; • Provide expedient training (as required) for the Debris Management Team and other involved personnel; • Contact contractors to determine their genreral availability; • Review waste management options for the anticipated types of debris likely to be generated. Ensure authorized waste transfer or disposal facilities are currently operational. Identify alternative facilities if those used during normal operations have been impacted by the disaster. (Note: The MSP/EMHSD will become involved only if supplemental state assistance is required in debris management operations due to the nature, scope and magnitude of the disaster and/or such assistance has been requested by the affected local jurisdiction.)
↓	↓
RESPONSE (PHASE I) (debris clearance / removal)	• Activate the Debris Management Team and Debris Management Center; • Activate identified TDSR Sites and Staging Areas as required; • Activate the appropriate elements of the debris management plan; • Establish debris removal priorities; • Activate standby contracts; • Initiate removal activities in accordance with established priorities; • Issue public information releases regarding debris clearance, separation, collection, and removal; • Request supplemental debris management assistance as required (mutual aid, federal Stafford Act or other direct assistance); • Track / document all major decisions and actions regarding the debris management operation; • Track / document all costs incurred in the debris management operation (e.g., labor hours, equipment hours, materials used, equipment rented, contracts activated or awarded, etc.).
↓	↓
RECOVERY (PHASE II) (debris reduction / disposal)	• Collect and transport debris from public rights of way to designated TDSR Sites; • Assist private property owners in removing debris that poses a public health and/or safety threat, but only if signed right-of-entry and hold harmless agreements are obtained. (Disposal of debris on private property that was not moved to the public right of way as requested is the responsibility of the property owner.); • Reduce stored debris at TDSR Sites using the most appropriate reduction method for the material; • Recycle materials if possible; • Dispose of reduced material in a landfill or through appropriate reuse. • Remove and properly dispose of hazardous waste; • Continuously monitor contractors to ensure that: 1) debris being picked up is disaster-related, 2) trucks hauling debris are fully loaded and are following designated routes, 3) appropriate safety measures are being followed, and 4) TDSR Sites are secure and being controlled properly; • Close / restore TDSR Sites and Staging Areas at the conclusion of the debris management operation.

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DEBRIS MANAGEMENT CONTRACT CONSIDERATIONS

Types of Contracts. In debris management, there are four types of contracts that may be entered into with private contractors for which FEMA will provide reimbursement under the PAGP:

Time and Material Contract. Under a time and material contract, the contractor is paid on the basis of time spent and resources utilized in accomplishing debris management tasks. FEMA requires, for reimbursement purposes, that the use of time and material contracts be limited to the first 70 work hours following a disaster.

Unit Price Contract. A unit price contract is based on weight (tons) or volume (cubic yards) of debris hauled, and should be used when the scope of work to be performed is reasonably large and exact measurement of the total work is difficult to define. It requires close monitoring of collection, transportation, and disposal to ensure that quantities are accurate. A unit price contract may be complicated by the need to segregate debris for disposal.

The unit price contract uses construction units and prices for these units to develop line item costs and total contract cost. The unit price contract is used when the scope of work can be generally quantified by actual field measure (e.g., 200 CY [cubic yards] of sand, 10 tons of debris, 17 trees, etc.). It should be noted that the total "bottom line" of the contract may increase or decrease depending upon the accuracy of the unit quantity. For this reason, it is as important to properly estimate units as it is to estimate unit cost. Change orders to adjust the estimated bid quantity to the quantity actually accomplished in the field may be issued during or at the end of the contract.

The development of a unit price includes many variables. Factors that influence the unit cost are:

- Types of debris;
- Method of removal;
- Distances and routes to the TDSR Sites;
- Permitting requirements;
- Worksite limitations; and
- Restoration requirements of TDSR Sites.

The advantage of the unit price contract is that the scope of work can be easily increased or decreased due to the fact that unit pricing for the work accomplished is established at the time of the bidding process. The contract also provides line items for the contractor to express all charges associated with the work, and therefore takes the "guesswork" out of the contractor's bidding procedure. The unit used in the unit price contracts must be as accurately estimated as possible. Otherwise, the final bottom line amount of the contract will be significantly different than the contract bid received at the bid opening.

Proper and efficient management of TDSR Sites are essential when unit price contracts are being utilized. The TDSR Sites become the primary point for quantity verification utilized for payment.

Well-organized and managed inspection stations should be established at entrance of each TDSR Site. When the contract unit of measurement is based on weight, provisions should be made for weighing trucks as they enter and exit the site. If the contract unit of measurement is the cubic yard (CY), inspection platforms should be built or brought in for the inspection of loaded trucks. Payment under a unit price contract is normally made on the basis of load tickets. It is recommended that the following procedures be followed when utilizing load tickets:

- It is important that Gate Inspectors read and become familiar with the technical provisions of the contract. Inspectors should conscientiously estimate each load hauled by the contractor.
- Improper estimates can lead to large and unnecessary government expenditures. If loads are not properly loaded or compacted, the Gate Inspector should reduce the rated volume of the truck accordingly. The Inspector should always be fair and consistent in dealing with contract personnel.
- It is recommended that a local government or MSP/EMHSD staff member or a special hire be designated as the TDSR Site Manager. The Site Manager should serve as the overall supervisor of the site inspection operation and should serve as the initial arbitrator for differences in opinion between the Gate Inspector and a contractor's representative.
- Monitoring must be documented for FEMA reimbursement. Documentation should include a monitoring schedule / plan, load tickets, photographs, etc.

Lump Sum Contract. A lump sum contract establishes a total price using a one item bid from a contractor. It should be used only when a scope of work is clearly defined, with areas of work and quantities of material clearly identified. Lump sum contacts can be defined in one of two ways:

- Area Method, where the scope of work is based on a one time clearance of a specified area; or
- Pass Method, where the scope of work is based on a certain number of passes through a specified area, such as a given distance along a right way.

The lump sum contract establishes a total contract price by a one item bid from a contractor. It is understood in a lump sum contract that the price of the work is fixed unless there is a change in the scope of work to be performed; therefore, the bottom line of the contract is not in question as it might be with the unit price contract. The specific advantages of a lump sum contract are:

- It establishes the cost of work at the time of bid opening;
- It is easy to monitor since the scope of work is well defined; and
- It is easy to tell when a contractor has completed all the work.

One disadvantage of the lump sum contract is that if the scope of work does not include a quantity estimate, then the quantity estimate becomes the responsibility of the contractor bidding the project. Experience has shown that the contractor will pass this burden back to the government in the form of contingencies which will be incorporated in the bid price. Therefore, the lump sum contract should be used only when the scope of work is clearly defined and the areas of work can be specifically quantified.

Cost Plus Fixed Fee Contract. A cost plus fixed fee contract is either a lump sum contract or a unit price contract with a fixed contractor fee added to the price.

Ineligible Contracts. In accordance with federal regulations (44 CFR 13.36) *cost plus percentage of cost contracts* are ineligible for FEMA reimbursement under the PAGP. In addition, contracts with debarred contractors are not eligible for grant reimbursement.

Contract Selection. If the State of Michigan becomes involved in the management of the debris operation, the MSP/EMHSD (as State Debris Manager and SPAO) will work closely with the involved Local Debris Managers, FEMA, and the Michigan Department of Management and Budget (MDMB) to determine the most appropriate contract(s) to use based on the nature, scope, magnitude, and expected duration of the debris operation. The unit price and lump sum types of contracts should be considered for most debris removal operations. As indicated above, a time and material contract may also be used during the first 70 work hours following a disaster, but a cost ceiling must be put in place to prevent the contractor from running up the costs.

Contract Specifications. The following items should be covered in any blanket purchase order that the State of Michigan might put in place to expedite hiring contractors to assist in the removal of debris:

(Note: this is a slightly modified version of language used in the “Tree Central” debris management operation for Federal Disaster 1226-DR-MI in 1998. References to “State Project Manager” used in 1998 should be changed to “State Debris Manager” in all future uses of this language.)

- The contractor will provide overall project coordination of all debris removal contractors and sub-contractors, including:
    - Take direction from, and report directly to, the State Project Manager (Debris Manager);
    - Acquisition and rental of non-standard or specialized equipment;
    - Selection of sub-contractors;
    - Coordination of State of Michigan resources with the debris removal activities.

- The contractor will initiate any debris removal in those areas specified by the State Project Manager (Debris Manager). Removal may be required in stages, such as initial clearance of right-of-ways, removal of trees from houses, and opening up other areas required for public access. A secondary response or final cleanup may be required in those same areas.

- Debris removal may include any of the following items, dependent upon the nature and scope of the disaster, the required response of the State, and the priorities established by the State Project Manager (Debris Manager):
    - Complete removal of any storm damaged tree; (Note: suggested alternate language: …"any disaster generated debris");
    - Hauling, grinding, or otherwise removal of all tree debris;
    - Trimming of storm damaged trees when removal is not required;
    - Flush cutting of stumps, grinding in place, or removal and disposing of stumps;
    - Disposal of all tree debris, including disposal by:
        - Tub grinding
        - Burning
        - Recycling (Note: may require regrinding to a smaller chip size)
        - Power generating
        - Other methods approved by the State Project Manager (Debris Manager)
    - Site restoration.

- The contractor shall bill all straight time, overtime, and double time at the applicable labor rates. These rates are to include all equipment cost, set up and travel costs, and all meals, lodging and incidental charges were required. Rates for specialized equipment shall be billed at hourly equipment rates approved by the State Project Manager (Debris Manager).

- The contractor will be directed to perform overall project management of the contractors and sub contractors at an Incident Command Center established by the State Project Manager (Debris Manager). The contractor will be responsible to staff the center at a level commensurate with the scope of the tree debris removal project.

Note: Any language included in a blanket purchase order that the State of Michigan might put in place at the time of an incident to expedite hiring contractors to assist in the removal of debris must be reviewed and approved by appropriate procurement authorities (i.e., Michigan Department of Management and Budget, MSP Purchasing) prior to being implemented.

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FACT SHEET: DEBRIS OPERATIONS – CLARIFICATION: EMERGENCY CONTRACTING VS. EMERGENCY WORK (FEMA RESPONSE / RECOVERY POLICY 9580.4 – JANUARY 19, 2001)

Source: FEMA web site (edited to fit plan format)

Response and Recovery Directorate Policy Number: 9580.4

Date Published: January 19, 2001

SUMMARY: Contracting for debris operations, even though it is "emergency work" in FEMA operations, does not necessarily mean the contracts can be awarded without competitive bidding. Applicants should comply with State laws and regulations, but should be aware that non-competitive contracting is acceptable ONLY in rare circumstances where there can be no delay in meeting a requirement. In general, contracting for debris work requires competitive bidding. The definition of "emergency" in contracting procedures is not the same as FEMA's definition of "emergency work".

DISCUSSION: There appears to be some confusion regarding the awarding of some contracts, especially for debris, without competitive bidding. The reason cited for such actions is that the contract is for emergency work, and competitive bidding is not required.

Part 13 of 44 CFR is entitled "Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments". These requirements apply to all grants and subgrants to governments, except where inconsistent with Federal statutes or regulations authorized in accordance with the exception provisions of Section 13.6. In essence, these regulations apply to all Federal grants awarded to State, tribal and local governments.

Non-competitive proposals awarded under emergency requirements are addressed as follows:

"Procurement by non-competitive proposals may be used only when the award of a contract is infeasible under small purchase procedures, sealed bids, or competitive proposals and one of the following circumstances applies:

(A) .....

(B) The public exigency or emergency of the requirement will not permit a delay resulting from competitive solicitation." (44 CFR Part 13.36(d)(4)(1)(B))."

Staff of the Office of General Counsel and the Office of the Inspector General have expressed concern that contracts are being awarded under this section without an understanding of the requirement. Simply stated, non-competitive contracts can be awarded only if the emergency is such that the contract award **cannot be delayed by the amount of time required to obtain competitive bidding**.

FEMA's division of disaster work into "emergency" and "permanent" is generally based on the period of time during which the work is to be performed, and not on the urgency of that work. Therefore, the award of non-competitive contracts cannot be justified on the basis of "emergency work", as defined by FEMA.

In some situations, such as clearing road for emergency access (moving debris off the driving surface to the shoulders or rights-of-way), or removal of debris at a specific site, awarding a non-competitive contract for site-specific work may be warranted; however, normally, non-competitive bid awards should not be made several days (or weeks) after the disaster or for long-term debris removal. Obviously, the latter situations do not address a public exigency or emergency which "will not permit a delay resulting from competitive solicitation".

Regarding competitive solicitations, applicants can use an expedited process for obtaining competitive bids. In the past, applicants have developed a scope-of-work, identified contractors that can do the work, made telephone invitations for bids, and received excellent competitive bids. Again, applicants must comply with State and local bidding requirements.

Please remind applicants that no contractor has the authority to make determinations as to eligibility, determinations of acceptable emergency contracting procedures, or definitions of emergency work. Such determinations are to be made by FEMA.

HAZARDOUS STUMP EXTRACTION AND REMOVAL ELIGIBILITY (FEMA RECOVERY POLICY 9523.11 – MAY 1, 2006)

Source: FEMA web site (edited to fit plan format)

TITLE: Hazardous Stump Extraction and Removal Eligibility

DATE: May 1, 2006

PURPOSE: Establish criteria used to reimburse applicants for removing eligible hazardous stumps from public or, where authorized, private property.

SCOPE AND AUDIENCE: The policy is applicable to all major disasters and emergencies declared on or after the date of publication. It is intended for all personnel involved in the administration and execution of the Public Assistance Program, including applicants.

AUTHORITY: Sections 403 and 407 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121-5206, as amended.

BACKGROUND: Public Assistance regulations authorize reimbursement for the removal of debris from public and private land when it is in the public interest. Such removal is in the public interest when it is necessary to: eliminate immediate threats to life, public health and safety, or eliminate immediate threats of significant damage to improved public or private property; or to ensure economic recovery of the affected community to the benefit of the community at large. Trees that are uprooted during a disaster event such that all or part of their roots are exposed may pose an immediate threat to public health and safety.

POLICY:

A. When a disaster event uproots a tree or stump (i.e., 50% or more of root ball is exposed) on a public right-of-way, improved public property or improved property owned by certain private nonprofit organizations, and the exposed root ball poses an immediate threat to life, public health and safety, FEMA may provide supplemental assistance to remove, transport, dispose, and provide fill for the root cavity of an eligible uprooted tree or stump. The Federal Emergency Management Agency (FEMA) will reimburse applicants reasonable costs for this type of work only when uprooted stumps are more than 24 inches in diameter (measured two feet from the ground), with the consensus of the Applicant and the State, and is approved in advance by FEMA, using the attached Hazardous Stump Worksheet.

   1. If it is necessary to remove an uprooted stump before it can be inspected by FEMA because it poses a threat that must be dealt with immediately, the applicant must submit documentation, to FEMA including photographs, that establishes its location on public property, specifics on the threat, stump diameter measured two feet up the trunk from the ground, quantity of material to fill the hole, and any special circumstances.

   2. FEMA will reimburse applicants for extraction, transport and disposal of stumps with a diameter of 24 inches or smaller at the unit cost rate for regular vegetative debris, using the attached Stump Conversion Table, as such stumps do not require special equipment.

   3. FEMA will reimburse applicants at the unit cost rate (usually cubic yards) for normal debris removal for all stumps, regardless of size, placed on the rights-of-way by others (i.e., contractors did not extract them from public property or property of eligible Private Non Profit organization). In such instances, applicants do not incur additional cost to remove these stumps – the same equipment is used to pick up “regular” debris can be used to pick up these stumps.

   4. If an applicant incurs additional costs in picking up large stumps (over 24 inches in diameter) from rights-of-way, it should complete the Hazardous Stump Worksheet and present documentation to FEMA in advance for consideration.

   5. Stumps with less than 50% of their root ball exposed should be cut flush at ground level, and the cut portion included with regular vegetative debris. Straightening or bracing of trees is not eligible for reimbursement.

ORIGINATING OFFICE: Recovery Division (Public Assistance Branch)

SUPERSESSION: Policy Directive supersedes all previous guidance on this subject.

REVIEW DATE: Three years from the date of publication.

//signed//
David Garratt
Acting Director of Recovery
Federal Emergency Management Agency

RELATED ATTACHMENTS (2):

Stump Conversion Table
Hazardous Stump Worksheet

STUMP CONVERSION TABLE

Diameter to Volume Capacity

The quantification of the cubic yards of debris for each size of stump in the following table was derived from FEMA field studies conducted throughout the State of Florida during the debris removal operations following Hurricanes Charley, Frances, Ivan, and Jeanne. The following formula is used to derive cubic yards:

$$\frac{[(\text{Stump Diameter}^2 \times 0.7854) \times \text{Stump Length}] + [(\text{Root Ball Diameter}^2 \times 0.7854) \times \text{Root Ball Height}]}{46656}$$

(Notes: 0.7854 is one-fourth P*i* and is a constant; 46656 is used to convert cubic inches to cubic yards and is a constant.)

The formula used to calculate the cubic yardage used the following factors, based upon findings in the field:

- Stump diameter measured two feet up from ground
- Stump diameter to root ball diameter ratio of 1:3.6
- Root ball height of 31”

Stump Diameter (Inches)	Debris Volume (Cubic Yards)	Stump Diameter (Inches)	Debris Volume (Cubic Yards)	Stump Diameter (Inches)	Debris Volume (Cubic Yards)
6	0.3	33	7.8	60	25.8
7	0.4	34	8.3	61	26.7
8	0.5	35	8.8	62	27.6
9	0.6	36	9.3	63	28.4
10	0.7	37	9.8	64	29.4
11	0.9	38	10.3	65	30.3
12	1	39	10.9	66	31.2
13	1.2	40	11.5	67	32.2
14	1.4	41	12	68	33.1
15	1.6	42	12.6	69	34.1
16	1.8	43	13.3	70	35.1
17	2.1	44	13.9	71	36.1
18	2.3	45	14.5	72	37.2
19	2.6	46	15.2	73	38.2
20	2.9	47	15.8	74	39.2
21	3.2	48	16.5	75	40.3
22	3.5	49	17.2	76	41.4
23	3.8	50	17.9	77	42.5
24	4.1	51	18.6	78	43.6
25	4.5	52	19.4	79	44.7
26	4.8	53	20.1	80	45.9
27	5.2	54	20.9	81	47
28	5.6	55	21.7	82	48.2
29	6	56	22.5	83	49.4
30	6.5	57	23.3	84	50.6
31	6.9	58	24.1		
32	7.3	59	24.9		

HAZARDOUS STUMP WORKSHEET

Applicant:		**Date:**	
Applicant Representative:		**Signature:**	
FEMA Representative (if available):		**Signature:**	
State Representative (if available):		**Signature:**	

	Physical Location (i.e., street address, road, cross streets, etc.)	Description of Facility (ROW, Park, City Hall, etc.)	Hazard?		Geo-Location (decimal degrees, 00.000000)		Tree Size (Diameter)	Eligible?		Fill For Debris Stumps (CY)	Comments (See attached sketch, photo, etc.)
			Yes	No	Latitude (N)	Longitude (W)		Yes	No		
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

DEBRIS OPERATIONS – HAND-LOADED TRUCKS AND TRAILERS (FEMA RECOVERY POLICY 9523.12 – MAY 1, 2006)

Source: FEMA web site (edited to fit plan format)

TITLE: Debris Operations – Hand-Loaded Trucks and Trailers

DATE: May 1, 2006

PURPOSE: To describe the criteria the Federal Emergency Management Agency (FEMA) will use to reimburse applicants for eligible debris removal accomplished with trucks and trailers loaded physically by hand, rather than with mechanical equipment.

SCOPE AND AUDIENCE: The policy is applicable to all major disasters and emergencies declared on or after the date of publication. It is intended for all personnel involved in the administration and execution of the Public Assistance Program, including applicants.

AUTHORITY: Sections 403 and 407 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121-5206, as amended.

BACKGROUND:

A. Debris removal companies under contract with local governments have frequently supplemented their vegetative debris removal operations by hiring subcontractors who modify their trucks and trailers by extending sidewalls with plywood or other materials to increase the vehicle's load capacity. Because of the tenuous nature of these improvements, operators typically load these vehicles physically by hand. The inefficiencies associated with loading these trucks or trailers by hand, instead of using mechanical equipment, effectively negates the increased capacity advantages of these vehicles. Hand loading cannot achieve compaction levels comparable to mechanically loaded vehicles. Further, the unit cost for transporting debris is based on mechanical loading of trailers and trucks.

B. FEMA performed studies throughout the State of Florida following the four devastating hurricanes in 2004 and determined that a mechanically-loaded vehicle had a weight-to-volume ratio at least twice that of hand-loaded vehicles. In other words, vehicles of the same measured capacity that were loaded by mechanical equipment and reasonably compacted carried at least twice the volume of debris as those loaded physically by hand. FEMA has therefore determined it is not reasonable to reimburse applicants - for hand-loaded vehicles and mechanically loaded vehicles – at the same rate.

POLICY:

A. Debris monitors located at temporary or final debris disposal sites will reduce the observed capacity of each hand-loaded truck or trailer load by 50% because of the low compaction achieved by hand-loading. For example, if a 40 cubic-yard (CY) hand-loaded truck or trailer arrives at a debris management or disposal site, and it appears to be 100 percent full, the actual quantity of debris in the truck or trailer will be recorded as 20 CY {(40 CY / 2) * 100%}. In the same manner, if the truck or trailer appears half full, the load will be recorded as 10 CY {(40 CY / 2) * 50%}. The maximum amount recorded for a hand-loaded vehicle will be 50% of its measured capacity.

B. FEMA will reimburse applicants on the basis of capacities calculated in A (Policy) above.

ORIGINATING OFFICE: Recovery Division (Public Assistance Branch)

SUPERSESSION: Not applicable.

REVIEW DATE: Three years from the date of publication.

____//signed//____
David Garratt
Acting Director of Recovery
Federal Emergency Management Agency

SAMPLE DEBRIS MANAGEMENT CONTRACTS

(Note: The following sample contracts can be modified as needed for debris management purposes in Michigan. Names and titles must be revised where required to ensure that the contract language is consistent with the terms used in this debris management plan and applicable local debris management plans. Also see the Case Study: "Tree Central" in Michigan attachment for a sample contract for disposal via a cogeneration plant.)

SAMPLE U.S. ARMY CORPS OF ENGINEER CONTRACT SCOPES OF WORK:

- **Scope of Work for Unit Price Contract for Debris Removal;**
- **Scope of Work for Sunken Vessel Removal Operations;**
- **Scope of Work for Site Management for Debris Reduction; and**
- **Scope of Work for Equipment Leasing for Clearing of Debris.**

SAMPLE FEMA CONTRACTS AND GUIDANCE:

- **Sample Emergency Demolition Services Agreement;**
- **Sample Right-of-Entry Permit / Hold Harmless Agreement; and**
- **Debris Removal Applicant's Contracting Checklist.**

SCOPE OF WORK FOR
UNIT PRICE CONTRACT FOR DEBRIS REMOVAL
RELATED TO
[NAME / NATURE OF DISASTER]
AT, IN, OR NEAR
[LOCATION OF RECOVERY EFFORTS]

1.0 **GENERAL**

1.1. The purpose of this contract is to provide debris clearing and removal response assistance to [LOCATION; i.e., "Michigan counties" or "Ingham and Eaton Counties in Michigan"] which have been declared disaster areas by the President because of the effects of [NAME OF DISASTER].

2.0 **SERVICES**

2.1. The Contractor shall provide for debris removal from the area(s) outlined on the attached maps, and described as: [DESCRIPTION OF WORK AREA].

2.2. The debris shall be taken to the dumpsite(s) indicated on the attached maps, located at [LOCATION(S) OF DUMPSITE(S)].

2.3. The total amount of debris to be removed under this contract is estimated to be [QUANTITY].

2.4. The work shall consist of clearing and removing any and all "eligible" debris (see section 4.0 for a definition of eligible debris) primarily from the public right-of-way (ROW) of streets and roads, as directed by the Contracting Officer's Representative (COR). Work will include 1) examining debris to determine whether or not debris is eligible, burnable or non burnable, 2) loading the debris, 3) hauling the debris to an approved dumpsite or landfill, and 4) dumping the debris at the dumpsite or landfill. Ineligible debris will not be loaded, hauled, or dumped under this contract. Burnable debris will loaded separately from non burnable debris. Mixed loading of burnable and non burnable will be kept to a minimum. The COR will determine the appropriate dump site for mixed loads.

2.5. Debris removal shall include all eligible debris found on the ROW within the area designated by the COR. The COR may specify any eligible debris within the ROW which should not be removed, or which should be removed at a later time. The Contractor shall make as many passes through the designated area as required by the COR. The Contractor shall not move from one designated work area to another designated work area without prior approval from the COR. Any eligible debris, such as fallen trees, which extends onto the ROW from private

property shall be cut at the point where it enters the ROW, and that part of the debris which lies within the ROW shall be removed. The Contractor shall not enter onto private property during the performance of this contract.

2.6. The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, and local governments or agencies, or of any public utilities.

2.7. The government reserves the right to inspect the site, verify quantities, and review operations at any time.

2.8. All work shall be accomplished in a safe manner in accordance with EM 385-1-1.

3.0 **LOAD TICKETS**

3.1. "Load tickets" will be used for recording volumes of debris removal. (See Enclosure)

3.2. Each ticket will contain the following information:

1. Ticket Number
2. Contract Number
3. Date
4. Contractor Name
5. Site Departure Time
6. Dump Arrival Time
7. Debris Classification
8. Debris Quantity

3.3. [SELECT <u>ONLY ONE</u> OF THE FOLLOWING PARAGRAPHS, AND DELETE THE OTHERS]

Load tickets will be issued by a COR prior to departure from the loading site. The COR will keep one copy of the ticket, and give three copies to the vehicle operator. Upon arrival at the dumpsite, the vehicle operator will give the three copies to the COR at the dumpsite, the COR will validate, retain one copy and give two copies to driver for the Contractor's records, (one copy for the sub-contractor and one copy for the prime contractor).

Load tickets will be issued by a COR prior to departure from the loading site. The COR will keep one copy of the ticket, and give two copies to the vehicle operator for the Contractor's records.

Load tickets will be issued by a COR to a vehicle operator upon arrival at the dumpsite. The COR will keep one copy of the ticket, and give two copies to the vehicle operator for the Contractor's records.

4.0 **DEBRIS CLASSIFICATION**

4.1. <u>Eligible Debris</u>. Debris that is within the scope of this contract falls under three possible classifications: Burnable, Non-Burnable, and Recyclable. Debris that is classified Household Hazardous Waste (HHW) is not to be transported by this contract.

4.2. <u>Burnable Debris</u>. Burnable debris includes all biodegradable matter except that included in the following definitions of other categories of debris. It includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs; untreated structural timber; untreated wood products; and brush.

4.3. <u>Non-Burnable Debris</u>. Non-burnable debris includes, but is not limited to, treated timber; plastic; glass; rubber products; metal products; sheet rock; cloth items; non-wood building materials; metal products (i.e., mobile trailer parts, household appliances [white metal], and similar items); uncontaminated soil; roofing materials; and carpeting.

4.4. <u>Household Hazardous Waste (HHW)</u>. Household hazardous wastes, such as petroleum products, paint products, etc., and known or suspected hazardous materials, such as asbestos, lead-based paint, or electrical transformers shall be removed by others. Coordination for hazardous debris removal is the responsibility of the Government.

4.5. Stumps. Tree stumps located within the ROW with one-half or more of the root ball exposed will be removed. Tree stumps with base cut diameter measurements less than or equal to 24 inches (measured 24 inches up from where the tree originally exited the ground) will be considered to be burnable debris and removed with the same methods used for other burnable debris. Tree stumps larger than 24 inches in diameter will be removed as burnable and paid for in accordance to the MEASURMENT and PAYMENT paragraphs in this contract.

5.0 **DUMPSITES**

5.1. The Contractor shall use only debris dumpsites designated in Section 2.2, unless otherwise approved by the COR. The Contractor shall haul non-burnable debris to the site designated for non-burnable debris and burnable debris to the burn site designated.

5.2. The dumpsite operator shall direct all dumping operations. The Contractor shall cooperate with the dumpsite operator to facilitate effective dumping operations.

5.3. The Government makes no representations regarding the turn-around time at the dumpsites.

6.0 **PERFORMANCE SCHEDULE**

6.1. The Contractor shall commence performance on [DATE].

6.2. The Contractor shall, with the COR's direction, provide a work plan showing where operations will begin and which streets / roads will be cleared on a 2, 7, and 14 day projection. The plan will be updated every two days.

6.3. Maximum allowable time for completion will be [ENTER] calendar days, unless the Government initiates additions or deletions to the contract by written change orders. Subsequent changes in completion time will be equitably negotiated by both parties pursuant to applicable state and federal law. Liquidated damages shall be assessed at $[AMOUNT] per calendar day for any time over the maximum allowable time established by the contract.

7.0 **EQUIPMENT**

7.1. All trucks and other equipment must be in compliance with all applicable federal, state, and local rules and regulations. Any truck used to haul debris must be capable of rapidly dumping its load without the assistance of other equipment; be equipped with a tailgate that will effectively contain the debris during transport and permit the truck to be filled to capacity; and measured and marked for its load capacity. Sideboards or other extensions to the bed are allowable provided they meet all applicable rules and regulations, cover the front and both sides, and are constructed in a manner to withstand severe operating conditions. The sideboards are to be constructed of 2" by 6" boards or greater and not to extend more than two feet above the metal bed sides. The COR must approve all requests for extensions. Equipment will be inspected by the Contractor prior to its use by the Contractor using applicable U.S. Army Corps of Engineers forms. The Forms will be provided to the Government after completion.

7.2. Trucks and other heavy equipment designated for use under this contract shall be equipped with two signs, one attached to each side. The U.S. Army Corps of Engineers will furnish these signs to the Contractor. The signs remain the property of the United States Government, and will be returned to the U.S. Army Corps of Engineers at the conclusion of the contract.

7.3. Prior to commencing debris removal operations, the Contractor shall present to the Government's representative all trucks or trailers that will be used for hauling debris, for the purpose of determining hauling capacity. The hauling capacity will be based on the interior dimensions of the truck's metal dump bed. Hauling capacity, in cubic yards, will be recorded and marked on each truck or trailer with permanent markings. Each truck or trailer will also be numbered for identification with a permanent marking.

7.4. Trucks or equipment which are designated for use under this contract shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled for others with debris hauled under this contract.

7.5. Equipment used under this contract shall be rubber tired and sized properly to fit loading conditions. Excessive size equipment (6 CY and up) and non rubber tired equipment must be approved by the COR.

8.0 REPORTING

8.1. The Contractor shall submit a report to the COR during each day of the term of the contract. Each report shall contain, at a minimum, the following information:

1. Contractor's Name
2. Contract Number
3. Crew
4. Location of work
5. Day of Report
6. Daily and cumulative totals of debris removed, by category

8.2. Discrepancies between the daily report and the corresponding load tickets will be reconciled no later than the following day.

9.0 OTHER CONSIDERATIONS

9.1. The Contractor shall supervise and direct the work, using skillful labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

9.2. The Contractor must be duly licensed in accordance with the State's statutory requirements to perform the work. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the COR.

9.3. The Contractor shall be responsible for taking corrective action in response to any notices of violations issued as a result of the Contractor's or any subcontractor's actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the Government.

9.4. The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. The Contractor shall provide all flag persons, signs, equipment, and other devices necessary to meet federal, state, tribal and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. At a minimum, one flag person should be posted at each approach to the work area. Work shall be accomplished in a safe manner in accordance with EM 385-1-1.

10.0 MEASUREMENT

10.1. Measurement for burnable debris removed will be by the cubic yard as predetermined through truck bed measurement. Trucks with less than full capacities will be adjusted down by visual inspection by the COR. Measurement will be documented by load tickets.

10.2. Measurement for non-burnable debris removed will be by the cubic yard as predetermined through truck bed measurement. Trucks with less than full capacities will be adjusted down by visual inspection by the COR. Measurement will be documented by load tickets

10.3. Measurement for payment of stumps removed with 25 to 36 inch diameter base cuts (measured 24 inches up from where the tree originally exited the ground) shall be per stump.

10.4. Measurement for payment of stumps removed with 37 to 48 inch diameter base cuts (measured 24 inches up from where the tree originally exited the ground) shall be per stump.

10.5. Measurement for payment of stumps removed with 49 inch and larger diameter base cuts (measured 24 inches up from where the tree originally exited the ground) shall be per stump.

10.6. Measurement for mobilization and demobilization will be by the job.

11.0 PAYMENT

11.1. Payment for the removal of burnable debris (including stumps 24 inches and smaller) to include all cost associated with loading, hauling and dumping will be paid for under the contract bid item for **Burnable Debris.**

11.2. Payment for the removal of non-burnable debris to include all cost associated with loading, hauling and dumping will be paid for under the contract bid item for **Non-burnable Debris.**

11.3. Payment for the removal of stumps, 25 inches and larger, to include all cost associated with loading, hauling and dumping will be paid for under the contract bid item for the appropriate size category for **Stumps.**

11.4. Payment for mobilization and demobilization will be paid for under the contract bid item for **Mobilization and Demobilization.**

11.5. Payment for work completed may be invoiced on a bi-weekly basis. Invoices will be based on verified quantities from the daily operational reports and valid load tickets.

11.6. The Contractor will be entitled to invoice for 60% of the mobilization and demobilization line item after all equipment is delivered to the designated work site. The remaining 40% will be due after all equipment is removed from the work site, all vehicle signs have been returned to the government, and receipt of a proper invoice.

11.7. All payments made under this contract will be in accordance with PAYMENTS clauses located in other sections of this contract

12.0 OTHER CONTRACTS

12.1. Other contracts may have been issued.

12.2. The Government reserves right to issue other contracts or direct other contractors to work within the area included in this contract.

13.0 ENCLOSURES / ATTACHMENTS

13.1. Bid Schedule

13.2. Daily Report

13.3. Load Ticket

BIDDING SCHEDULE

ITEM	Min. QTY	DESCRIPTION	UNITS	UNIT PRICE	AMOUNT
001.	1	Mobilization and Demobilization	Lump Sum		
002.	xxx	Removal of Burnable Debris	Cubic Yard		
003.	xxx	Removal of Non-Burnable Debris	Cubic Yard		
004.	xxx	Removal of Stumps - 26 to 36 inch	Each		
005.	xxx	Removal of Stumps - 37 to 48 inch	Each		
006.	xxx	Removal of Stumps - 49 inch and larger	Each		

DAILY REPORT

CONTRACTOR: CONTRACT NO. :					DATE OF REPORT:	
Truck No.		**Capacity**	**Burn Site Trips**	**CY Totals**	**Landfill Trips**	**CY Totals**
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
	DAILY TOTALS			**CY**		**CY**

DAILY REPORT				
CONTRACTOR:			DATE OF REPORT:	
Processing Site		**Stumps 26-36 in.**	**Stumps 36-48 in.**	**Stumps > 49”**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
	DAILY TOTALS			

SAMPLE DEBRIS LOAD TICKET

LOAD TICKET	Ticket No.: **00001**		
Municipality (Applicant):			
Prime Contractor:			
Sub-Contractor:			
TRUCK INFORMATION			
Truck No.:	Capacity (CY):		
Truck Driver (print legibly):			
LOADING INFORMATION			
Loading	Time	Date	Inspector / Monitor
Location (address or cross streets):			
GEO-SPATIAL INFORMATION (When using GPS coordinates use decimal degrees – N xx.xxxxx)			
N	**W**		
UNLOADING INFORMATION			
Debris Classification		Estimated %, CYs, or Actual Weight	
	Vegetation		
	C & D		
	White Goods		
	HHW		
	Other* (see below)		
Unloading	Time	Date	Inspector / Monitor
DMS (TDSR Site) Name / Location:			
*Other Debris Explanation:	Original: Applicant		
	Copy 1:		
	Copy 2:		
	Copy 3:		

SCOPE OF WORK FOR
[SPECIFY NAME/NATURE OF DISASTER]
SUNKEN VESSEL REMOVAL OPERATIONS
[SPECIFY NAME(S) OF VESSELS]
[SPECIFY LOCATION OF RECOVERY EFFORTS]

1.0 GENERAL

1.1. The purpose of this contract is to provide removal and disposal of the sunken vessel(s) [specify name of vessel(s)] from [specify location of recovery efforts]. The exaction location of the vessel(s) is shown on the contract drawing. The complete physical and structural condition of the vessel(s) is currently unknown. Some information as to vessel(s) type, size, and construction is described in the paragraph "Condition of Vessel(s)." The Contractor shall provide all plant, labor, equipment, materials, supplies, divers and services as necessary to remove and dispose of the sunken vessel(s). The Contractor may use any standard salvage method which complies with local and/or federal laws and regulations. The intent of the contract is to have the vessel(s) raised and legally disposed of in accordance with applicable laws and regulations

2.0 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK

2.1. The Contractor acknowledges that he/she has taken steps reasonably necessary to ascertain the nature and location of the work, and that he/she has investigated and satisfied him/her self as to the general and local conditions which can affect the work or its cost. This includes but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

2.2. The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

2.3. All work shall be accomplished in accordance with EM 385-1-1 and appropriate U. S. Coast Guard and other federal, state and local regulations. The Contractor shall comply with all appropriate safety practices, regulations and policies, to include personal flotation devices and water safety for all Contractor and Government personnel in or around the work area.

3.0 LOCATION OF VESSEL(S)

The vessel(s) is (are) located [specify location of vessel(s)]. It lies in [specify quantity] feet of water. The approximate location of the vessel(s) is Lat [specify degrees, minutes, and seconds North / South] and Long [degrees, minutes, and seconds East / West].

4.0 CONDITION OF VESSEL(S)

[Specify all known information about the structure of the vessel(s) and any known engine(s) information.]

5.0 PRE-WORK CONFERENCE

The Contracting Officer will conduct a pre-work meeting. It will be arranged by the Contracting Officer's Representative (COR) after award of the contract and shall be held before the Notice to Proceed is issued. The successful offerer will be notified and will be required to attend. The CORs will notify the Contractor of the time, date, and location set for the meeting. At this conference, the Contractor shall be oriented with respect to Government procedures and line of authority, contractual, administrative, and work related matters. This Scope of

Work will be discussed and any Contractor questions or concerns will be addressed. Minutes of the meeting shall be prepared by the Contacting Officer or the CORs and signed by both the Contractor and the Contracting Officer or the CORs. The minutes shall become part of the contract file. There may also be occasions when subsequent conferences will be called to reconfirm mutual understanding. The Contractor shall be prepared to discuss all plans and schedules for removing and disposing of the vessel(s) and the conditions which may affect the work.

6.0 **CONTRACT DRAWINGS**

6.1. The contract drawings will consist of one scaled half-size drawing that will include all pertinent information necessary for bidding purposes. By request only, the winning bidder will be provided one full-size drawing.

6.2. The Contractor shall maintain a separate full-size drawing, marked up in red, to indicate the final site conditions. Upon completion of the work, the Contractor shall sign the marked up drawing in the following manner: "I CERTIFY THAT THIS CORRECTED DRAWING INDICATES SALVAGE AS ACTUALLY PERFORMED IS AN ACCURATE REPRESENTATION OF THE SPECIFIED WORK. THIS DRAWING IS APPROVED FOR PREPARATION OF AS-BUILT DRAWINGS." The marked up drawing shall then be furnished to the Contracting Officer prior to acceptance of the work. The Government reserves the right to withhold final payment until acceptable as-built drawing has been submitted.

6.3. The below listed drawings are incorporated as part of this contract.

Title	Sheet No.

7.0 **PERMITS AND RESPONSIBILITIES**

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits not already obtained by the Government, and for complying with any federal, state, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's negligence or fault, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work.

8.0 **BRIDGE TO BRIDGE COMMUNICATIONS**

Because this work will occur within a channel with heavy traffic, and in order that radio communication may be made with passing vessels, all tugs or salvage vessels that work under this contract shall be equipped with bridge-to-bridge radio telephone equipment. The radio equipment shall operate on a single channel of very high frequency (VHF) FM, on a frequency of [specify MC] MC per second with low power output having a communication range of approximately ten miles. The frequency has been approved by the Federal Communications Commission. Channels [specify channels] must be monitored at all times.

9.0 **CONTRACT PRICES – BIDDING SCHEDULES**

Payment for the work specified in the Bidding Schedule shall constitute full compensation for furnishing all plant, labor, equipment, supplies, and materials, and for performing all operations required to complete the work in accordance with the drawings and specifications. All costs for work not specifically mentioned in the Bidding Schedule shall be included in the contract price.

10.0 **MISPLACED MATERIAL.**

Should the Contractor, during the progress of the work, lose, dump, throw overboard, sink, or misplace any material, plant, machinery, or debris, the Contractor shall recover and remove the same with the utmost dispatch. The Contractor shall give immediate notice, with description and location of such obstructions, to the Contracting Officer or inspector, and when required shall mark or buoy such obstructions until the same are removed. Should the Contractor refuse, neglect or delay compliance with the above requirements, such obstructions may be removed by the Government, and the cost of such removal will be deducted from any money due or to become due the Contractor, or will be recovered under his bond. The liability of the Contractor for the removal of a vessel

wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 419 et seq.).

11.0 SUPERINTENDENCE BY THE CONTRACTOR

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly supervise the work and have on the work site a competent superintendent who has the authority to act and sign for the Contractor. All guidelines established in the paragraph “Contractor Quality Control” shall be followed.

12.0 UNIDENTIFIED OBJECTS

Should the Contractor, during salvage operations, encounter any objects or vessels on the channel bottoms, he shall notify the Contracting Officer immediately as to the location of object, and any other pertinent information necessary for the Contracting Officer's information and action as he determines to be necessary.

13.0 INSPECTION BY THE GOVERNMENT

13.1. Government personnel will inspect the salvage operations when in progress. The Contractor is required and shall furnish Government personnel transportation from shore to the site of salvage operations as necessary.

13.2. The Government intends to document the removal and disposal operations. The Contractor will be required to perform the work in an orderly fashion.

14.0 PAYMENT

The Government will pay 60% of the mobilization and demobilization lump sum price when the Contractor has mobilized and arrived at the work site with the necessary plant and equipment to perform the job. The remaining portion of the mobilization and demobilization costs shall be paid in full when the Contractor has completed the job and submitted a proper invoice. The Contractor shall include, in the prices for the items listed in the Bidding Schedule, all costs for work in the scope of work, whether or not specially listed in the Bidding Schedule.

15.0 WORK SCHEDULE

The Contractor will be required to work as a minimum a ten (10) hour day, six (6) days a week. Work day shall be normal daylight hours. The Contractor may work more than ten (10) hours per day if desired. Work hours and schedules to be discussed and approved by Contracting Officers Representative.

16.0 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK

The Contractor shall be required to (a) commence removal operations under this contract within [specify number of days] calendar days after the date the Contractor receives the Notice to Proceed, (b) prosecute the work diligently, and (c) to complete the work (raising, towing, re-sinking) in its entirety not later than [specify number of days] calendar days after the date the Contract or receives the Notice to Proceed. The time stated for completion shall include final.

17.0 REMOVAL AND DISPOSAL

Because of the lack of information available on the vessel(s) construction, the Contractor will have to perform a complete physical assessment of the vessel(s) structural stability prior to removal. The Contractor may utilize any standard removal method to complete the work defined in this contract. The Government does require that certain actions occur during the removal and disposal operation. If any of the said conditions are not met, then the Contractor will not have met the contract expectations and will be in violation of the Contract agreement. The Contractor shall be required to correct all deficiencies at no additional cost to the Government and without any further time extension.

17.2. Any deviations from these general guidelines must be discussed with and approved by the Contracting Officer prior to taking action.

18.0 PROTECTION OF EXISTING STRUCTURE, EQUIPMENT, AND UTILITIES

18.1. The Contractor shall preserve and protect all structures, equipment, vegetation, and utilities at or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required at the work site. The Contractor shall repair any damage to those facilities, including those that are property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

18.2. The Contractor will be responsible for verifying the locations and depths of all utility crossings and take precautions against damages which might result from his operations. If any damage occurs as a result of his operations, the Contractor will be required to suspend work until the damage is repaired and approved by the Contracting Officer. Costs of such repairs and downtime of the operation and attendant plant shall be at the Contractor's expense.

19.0 ENVIRONMENTAL CONCERNS

The Contractor shall comply with all applicable local, county, territorial, state and federal regulations and laws concerning environmental issues. The contractor shall take proper steps to protect the uplands, beach, and open waters from environmental damages of any kind. The Contractor shall comply with all requirements under the terms and conditions set forth in the permits list in the paragraph entitled, "PERMITS AND RESPONSIBILITIES."

20.0 OBSTRUCTION OF NAVIGABLE WATERWAYS

20.1. The Contractor shall:

20.1.1. Promptly recover and remove any material, plant, machinery, or appliance which the Contractor loses, dumps, throws overboard, sinks, or misplaces, and which, in the opinion of the Contracting Officer, may be dangerous to or obstruct navigation.

20.1.2. Give immediate notice, with the description and locations of any such obstructions, to the Contracting Officer.

20.1.3. When required by the Contracting Officer, mark or buoy such obstructions until the same are removed.

20.2. The Contracting Officer may:

20.2.1. Remove the obstruction by contract or otherwise should the Contractor refuse, neglect, or delay compliance with this paragraph; and

20.2.2. Deduct the cost of removal from any monies due or to become due to the Contractor; or

20.2.3. Recover the cost of removal from the Contractor's bond.

20.2.4. The Contractor's liability for the removal of a vessel wrecked or sunk without fault or negligence is limited to that provided in sections 15, 19, and 20 of the River and Harbor Act of 1899 (33 U.S.C. 410 et. seq)

21.0 NOTIFICATION OF COAST GUARD

The Contractor must notify the area Coast Guard prior to commencement of the work. Information pertaining to contract work schedule, location of rig and equipment during work, and potential hazards of the operation should be provided. The individual to be contacted locally is [name of local contact]. All vessels that are regulated by the U. S. Coast Guard shall have current inspections and certificates issued by the U. S. Coast Guard before being placed in service for use for this contract. A copy shall be posted in a public area aboard the vessel.

22.0 FINAL EXAMINATION

The Contractor and Government will inspect the areas where the vessel(s) and debris have been removed. Any items found at the work sites will be removed by the Contractor at no additional cost to the Government. Inspection

may include side-scan sweeping, diving, and/or visual if necessary to insure all wreckage and debris have been removed. The Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

CONTRACT NO._____

BIDDING SCHEDULE

ITEM	DESCRIPTION	QUANTITY	UNIT OF ISSUE	UNIT PRICE	AMOUNT
1.	Provide services to remove and dispose of sunken vessel [specify name]		vessel		
2.	Provide services to remove and dispose of sunken vessel [specify name]		vessel		
3.	Provide services to remove and dispose of sunken vessel [specify name]		vessel		
4.	Mobilization	Lump Sum			
5.	Demobilization	Lump Sum			

Removal of Navigational Hazards Checklist of Considerations
(From FEMA Debris Management Training Module, G202)

- Coordinate with the U.S. Coast Guard, state / local marine patrol, local government agencies, and legal counsel.
- Inspect marinas in order to locate debris. Inspections can be done visually by helicopter or boat, via side-scan sonar, or via diving.
- Use Global Positioning System (GPS) survey methods to pinpoint location of sunken debris.
- Keep a log that reflects an accurate count of debris items with corresponding locations.
- Record the vessel registration number.
- Photograph the wreckage.
- Provide notification by certified letter to private owners of impending vessel removal. This should be performed in accordance with legal constraints.
- Provide the owner an opportunity to remove the vessel prior to state (or federal) government initiation of debris removal.
- Provide public notice in local newspapers.
- Generate scopes of work based on items to be removed or time and material.
- Maintain flexibility due to problems inherent to work areas influenced by marine conditions. Other problems can occur as a result of wreckage removal by others prior to the issuance of a “Notice to Proceed” contract. Flexibility in contract execution can be achieved by issuing an equipment rental type contact. Fixed price contracts with each piece of debris indicated as a line item are not recommended. Incorporate appropriate regulatory concerns, and/or applicable state laws.
- Maintain continuous communication with the U.S. Coast Guard and applicable local and state agencies.
- Continually verify the number and locations of sunken vessels.
- Remove or replace defective buoys.
- Require a bill of sale or a vessel registration be presented to the authorized debris removal representative on site if an individual claimed a vessel during removal operations.
- Ensure that accurate records are maintained.
- Ensure that contracts and the cleanup schedule incorporate marine constraints. Debris located in shallow areas may be inaccessible to contractor equipment during low tides / low water levels.
- Ensure that contracts include salvage rights to the contractor.

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SCOPE OF WORK FOR
SITE MANAGEMENT FOR DEBRIS REDUCTION
RELATED TO
[NAME/NATURE OF DISASTER]
AT, IN, OR NEAR
[LOCATION OF RECOVERY EFFORTS]

1.0 GENERAL

1.1. The purpose of this contract is to provide site management and reduction of debris generated as a result of [NAME OF DISASTER] in [DISASTER LOCATION; I.E. "Michigan counties" or "Ingham and Eaton Counties in Michigan"] which have been declared disaster areas by the President because of the effects of [NAME OF DISASTER].

1.2. The Contractor shall manage and operate the debris reduction site located at [SITE LOCATION]. The site is approximately [SIZE] acres in total area. An outline of the site location is shown in the attached map.

1.3. Contractor shall provide all management, supervision, labor, machines, tools, and equipment necessary to accept, process, reduce, incinerate, and dispose of disaster related debris. The debris to be processed consists primarily of burnable debris, with variable amounts of non-burnable included. Segregation of debris into various categories will be required.

1.4. Reduction of burnable debris shall be through air curtain incineration. [INCLUDE OR DELETE NEXT TWO SENTENCES] Reduction of burnable debris may also be accomplished through chipping / grinding. Reduction by this means, however, 1) must be at the same rate as indicated for incineration, and 2) disposal of the chips / mulch would be the responsibility of the Contractor, and 3) shall be done at no increased cost to the Government.

2.0 SERVICES

2.1. Contractor will establish lined temporary storage areas for ash, household hazardous waste, fuels, and other materials that can contaminate soils, runoff, or groundwater. Contractor shall set up plastic liners under stationary equipment such as generators and mobile lighting plants unless otherwise directed by the Contracting Officer's Representative (COR).

2.2. Contractor shall be responsible for establishing site layout.

2.3. Contractor will be responsible for traffic control, dust control, erosion control, fire protection, onsite roadway maintenance, and safety measures. The Contractor shall comply with local, tribal, state and federal safety and health requirements.

2.4. Contractor shall manage the site to accept debris collected under other contracts. Contractor shall direct traffic entering and leaving the site, and shall direct dumping operations at the site.

2.5. Contractor shall be responsible for sorting and stockpiling of debris at the site. Debris shall be segregated into 1) burnable debris, 2) non-burnable debris, 3) household hazardous waste, and 4) ash residue. Further segregation of non-burnable debris, such as recyclable material or durable goods may be necessary. Debris classifications are defined in Section 3.0.

2.6. Contractor shall be responsible for disposal of non-burnable debris and ash residue. Non burnable debris and ash shall be hauled to [NAME OF SITE OR LANDFILL, *NOTE: SITE MUST HAVE SCALES.*] for disposal. [SELECT ONE OF THE FOLLOWING SENTENCES] Tipping fees will be [PRICE PER TON] and will be the responsibility of the contractor for payment. [OR] Tipping fees will be the responsibility of the Government. Removal of household hazardous waste from the reduction site, including loading of household hazardous waste at the site, will be performed under a separate contract.

2.7. Upon completion of the debris reduction process, the Contractor will clear the site of all debris (excluding household hazardous waste) and restore the site to the satisfaction of the COR.

2.8. The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, tribal and local governments or agencies, or of any public utilities.

3.0 **DEBRIS CLASSIFICATION**

3.1. Eligible Debris. Debris that is within the scope of this contract falls under three possible classifications: Burnable, Non-Burnable, and Household Hazardous Waste.

3.2. Burnable Debris. Burnable debris includes all biodegradable matter except that included in the following definitions of other categories of debris. It includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs; untreated structural timber; untreated wood products; and brush.

3.3. Non-Burnable Debris. Non-burnable debris includes, but is not limited to, treated timber; plastic; glass; rubber products; metal products; dry wall; cloth items; non-wood building materials; and carpeting. Some non-burnable debris is recyclable. Recyclable debris includes metal products (i.e., mobile trailer parts, household appliances [white metal], and similar items), and uncontaminated soil.

3.4. Household Hazardous Waste (HHW). Household hazardous wastes, such as petroleum products, paint products, etc., and known or suspected hazardous materials, such as asbestos, lead-based paint, or electrical transformers shall be removed by others. Coordination for hazardous debris removal is the responsibility of the Government. Known or suspected HHW that mistakenly enters the waste stream shall be placed in an appropriate storage area for removal by others.

3.5. Stumps. Tree stumps with base cut measurements less than two (2) feet in diameter will be disposed of with the same methods used for other burnable debris. Tree stumps larger than two (2) feet in diameter will be disposed of by either splitting and burning, or chipping / grinding. The method will be at the discretion of the Contractor.

3.6. Ash. Ash is the residue produced by incineration of the burnable debris. When handling ash, it will be required to “wet down” the ash to prevent dust problems.

3.7. Chips / Mulch. Chips and mulch are the end products of chipping or grinding wood products. Proper disposal of chips and mulch is to find environmentally-friendly (non-landfill disposal) use for the material.

4.0 **PERFORMANCE SCHEDULE**

4.1. Immediately following Bid Opening, the apparent low bidder will meet with the COR to discuss matters of judgment, safety, quality control, coordination, payment, record keeping, and reporting.

4.2. Schedule. The Contractor shall begin preparation for mobilization immediately after Notice to Proceed and be fully operational within [HOURS] hours after Notice to Proceed.

4.3. Production. The Contractor is required to process a minimum of [RATE] [*NOTE: MOST INCENERATORS BURN 150 TO 180 CY PER HOUR; ALLOW 4 HOURS DOWN TIME FOR SERVICE / ASH REMOVAL PER 24 HOURS*] cubic yards of debris per calendar day. The minimum required reduction / disposal rate shall be achieved no later than the second calendar day after receipt of Notice to Proceed. This minimum production rate is increased to [INCREASED RATE] in the event that the Government exercises the option for additional reduction capacity. Liquidated damages shall be assessed at $[AMOUNT] per calendar day for any day in which the minimum processing rate is not met, unless non-compliance is due to insufficient debris amounts being delivered to the site.

4.4. Completion. All work, including site restoration prior to close-out, shall be completed within [DAYS] calendar days after receiving notice from the COR that the last load of debris has been delivered, unless the Government initiates additions or deletions to the contract by written change orders. Subsequent changes in completion time will be equitably negotiated by both parties pursuant to applicable state and federal law. Liquidated damages shall be assessed at $[AMOUNT] per calendar day for any time over the maximum allowable time established above.

5.0 **EQUIPMENT**

5.1. The Contractor shall provide all equipment necessary to prepare the site, stockpile the debris, feed the air curtain incinerator(s), remove ash from the incinerator(s), load and haul for disposal all non-burnable debris and ash residue, and any other equipment which may be necessary for the performance of this contract. The Contractor shall comply with local, tribal, state and federal safety and health requirements.

5.2. All equipment must be in compliance with all applicable federal, state, tribal and local rules and regulations. All equipment and operator qualifications will meet the requirements of local, tribal, state and federal safety and health requirements. The Contractor, using the applicable inspection forms, will inspect equipment prior to its use. The completed forms will be provided to the Government.

5.3. Prior to commencing debris reduction and disposal operations, the Contractor shall present to the Contracting Officer or his/her representative, the COR, for approval, a detailed description of all equipment to be used for debris handling, sorting, processing, incinerating, loading, and hauling. The description shall state the equipment brand name, model, and horsepower (including all air curtain incinerators).

5.4. Equipment which is designated for use under this contract shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled or processed for others with debris hauled or processed under this contract.

5.5. Reduction of burnable debris may be by either air curtain pit burning or portable-air curtain incinerators. Section 6.0 specifies requirements for air curtain pit burning. Section 7.0 specifies requirements for portable air curtain incinerators.

[DELETE NEXT SECTION IF CHIPPING / GRINDING / MULCHING NOT ALLOWED IN CONTRACT]

5.6. Reduction of burnable wood debris may also be accomplished by chipping and grinding, provided the processing rate given in Section 4.3 can be maintained. Section 8.0 specifies requirements for chipping and grinding procedures.

6.0 **AIR CURTAIN PIT BURNING**

[SELECT ONE OF THE NEXT TWO PARAGRAPHS AND DELETE THE OTHER, DEPENDENT UPON WHETHER THE PIT IS TO BE CONSTRUCTED ABOVE GROUND OR DUG DOWN, BASED ON WATER TABLE]

[BELOW-GRADE PIT; LOW WATER TABLE]

6.1. The air curtain pit burning method incorporates an earthen pit, constructed by digging below grade, and a blower. The blower and pit make up an engineered system which must be precisely configured to properly function. The blower must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. The pit configuration must have a precise width, depth and length to compliment the blower. The composition and operation of the air curtain pit incinerator(s) shall conform generally to the drawings in Figures 1, 2, and 3 of this scope of work.

[ABOVE-GRADE PIT; HIGH WATER TABLE]

6.1. The air curtain pit burning method incorporates an earthen pit, constructed by building above grade, and a blower. The blower and pit make up an engineered system which must be precisely configured to properly function. The blower must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. The pit configuration must have a precise width, depth and length to compliment the blower. The composition and operation of the air curtain pit incinerator(s) shall conform generally to the drawings in Figures 1, 2, and 3 of this scope of work.

6.2. Minimum required air velocity measured at the nozzle is 8,800 ft/min (100 mph). Minimum air flow rate measured at the nozzle is 900 cubic feet per min per linear foot of pit length. (As an example, a 20 ft long pit would require a blower with a nozzle velocity of 8,800 ft/min and nozzle output rate of 18,000 cfm. This example is intended for explanation purposes only, and does not imply a recommended pit length for actual operations.)

6.3. The pit should be a maximum of 8 feet wide, and should be from 12 to 20 feet deep. The actual pit dimensions should be such that the system functions properly.

6.4. Pits must be constructed out of a highly compactable material that will hold its shape and support the weight of the loading equipment. There shall be an impervious layer of clay or limestone on the bottom of the pit to provide a barrier for ground water protection. This layer shall be a minimum of one-foot thick and be repaired as necessary after each ash removal operation.

6.5. There is to be a minimum distance of 100 feet between the burn area and the nearest debris piles. There is to be a minimum distance of 1,000 feet between the burn area and the nearest building. Contractors are responsible for assuring that the public and workers are kept a safe distance from the burn site.

6.6. The burn will be extinguished at least two hours before removal of the ash mound. Wetting of the ash will be necessary to reduce dust while removing ash.

6.7. The burn pits must be made of limestone or other highly compactable material and be capable of supporting the wheel weight of the loading equipment. There should be an impervious layer of clay or limestone on the bottom of the pit to attempt to seal the ash from the aquifer. This impervious layer should be at least one-foot thick, and should be repaired or replaced if scraped by bulldozers, excavators, or other equipment.

6.8. The ends of the pits must be sealed with dirt ash or other material to a height of four feet.

6.9. A 12-inch dirt seal must be placed on the lip of the burn pit area to seal the blower nozzle. The nozzle should be three to six inches from the edge of the pit.

6.10. There should be one-foot high warning stops running the length of the pits to alert equipment operators when they are close to the pit. The warning stops should be constructed of fireproof material.

6.11. No hazardous or contained-ignitable material is to be dumped into the pit.

6.12. The air flow should hit the wall of the pit at about two feet below the edge of the pit and the debris should not break the path of the air flow, except during dumping.

6.13. The length of the pit should be no longer than the length of the blower system, and the pit should be loaded uniformly along the length.

6.14. The contractor is responsible for ensuring that the public is protected from the burn operation. Signs, fences, and other measures can be used depending on site conditions.

6.15. Emissions must meet state and federal standards for burning operations.

6.16. The Contractor shall be responsible for dust control while handling ash materials.

7.0 **PORTABLE AIR CURTAIN INCINERATORS**

7.1. Portable incinerators use the same principles as air curtain pit systems. The primary difference being portable incinerators utilize a pre-manufactured pit in lieu of an onsite constructed earth or limestone pit. The pits are engineered to precise dimensions to compliment the blower systems. The composition and operation of the air curtain pit incinerator(s) shall conform generally to the drawings in Figures 1, 2 and 3 of this scope of work.

7.2. Minimum required air velocity measured at the nozzle is 8,800 ft/min (100 mph). Minimum air flow rate measured at the nozzle is 900 cubic feet per min (cfm) per linear foot of pit length. (As an example, a 20-foot long pit would require a blower with a nozzle velocity of 8,800 ft/min and nozzle output rate of 18,000 cfm. This example is intended for explanation purposes only, and does not imply a recommended pit length for actual operations.)

7.3. There is to be a minimum distance of 100 feet between the portable incinerator and the nearest debris piles. There is to be a minimum distance of 1,000 feet between the portable incinerator and the nearest building. Contractors must assure that the public and workers are kept a safe distance from the incinerator.

7.4. The burn will be extinguished at least two hours before removal of the ash.

7.5. There should be one-foot high warning stops running the length of the pits to alert equipment operators when they are close to the pit. The warning stops should be constructed of fireproof material.

7.6. No hazardous or contained-ignitable material is to be dumped into the pit.

7.7. The contractor is responsible for ensuring that the public is protected from the burn operation. Signs, fences, and other measures can be used depending on site conditions.

7.8. Emissions must meet state and federal standards for burning operations.

7.9. The Contractor shall be responsible for dust control while handling ash materials.

[DELETE ENTIRE NEXT SECTION IF CHIPPING / GRINDING NOT ALLOWED; IF THIS SECTION IS DELETED, REMAINING SECTION WILL NEED TO BE RE-NUMBERED]

8.0 **CHIPPING AND GRINDING**

8.1. If the Contractor chooses to use chipping / grinding as a method of debris reduction, it is the Contractor's responsibility to acceptably dispose of the chips or mulch, at no additional cost to the Government. Because the volume reduction achieved by chipping / grinding is not as great as the volume reduction achieved by incineration, disposal of the chips or mulch in a landfill is not an acceptable means of disposal. For disposal, the chips or mulch must be put to some benefit or use. The Contractor may provide or sell the chips or mulch to be recycled for use in agricultural mulch, fuel, or wood products.

8.2. The average chip size produced will be dependent on the needs of the end user, but typically should not exceed four inches in length and ½ inch in diameter.

8.3. Contamination: Contaminants are all materials other than wood products. Contaminants must be held to 10% or less for the chips or mulch to be acceptable. Plastics should be eliminated completely. To help eliminate contaminants, root rake loaders should be used to feed or crowd material to the chipper / grinder. Bucket loaders tend to scoop up earth, which is a contaminant. Hand laborers must be utilized to pull out contaminants prior to feeding the chipper / grinders. The more contaminants, the more numerous the laborers required. Shaker screens are required when processing stumps with root balls or when large amounts of soil are present in the vegetative debris.

8.4. Chips / mulch should be stored in piles no higher than 15 feet, and meet all state and local laws.

9.0 **REPORTING**

9.1. The Contractor shall submit a report to the COR no later than [TIME] each day. Each report shall contain, at a minimum, the following information:

a) Contractor's name;
b) Contract number;
c) Daily and cumulative totals of debris processed, to include method(s) of processing and disposal location(s);
d) Daily estimate of household hazardous waste (HHW) debris segregated, and cumulative amount of HHW placed in the designated holding area; and
e) Any problems encountered or anticipated.

10.0 **SITE CONSIDERATIONS**

10.1. Site Plan: The Contractor will provide a site operations plan for review and approval by the COR prior to beginning work. At a minimum, the plan will address the following:

a) Access to site;
b) Site management, to include point-of-contact, organizational chart, etc.;
c) Traffic control procedures;

d) Site security;
e) Site safety;
f) Site layout / segregation plan;
g) Hazardous waste materials plan; and
h) Environmental mitigation plan, including considerations for smoke, dust, noise, traffic, buffer zones, storm water runoff archeology, historic preservation, wetlands, and endangered species as appropriate.

10.2. Site Preparation: The Contractor shall be responsible for preparing the site(s) to accept the debris. This preparation shall include clearing, erosion control, grading, construction and maintenance of haul roads and entrances. The Contractor shall provide utility clearances and sanitation facilities, if needed. The Contractor shall protect existing structures at the sites and repair any damage caused by his/her operations at no additional cost to the Government.

10.3. Site Security: The Contractor shall be responsible for installing site security measures and maintaining security for his/her operations at the site.

10.4. Fire Protection: The Contractor shall manage the site to minimize the risk of fire.

10.5. Ash Containment Area: The Contractor shall be responsible for the storage, removal, and containment of ash from all burning operations. The containment area will be “wetted down” periodically under this contract to prevent particles from becoming airborne.

10.6. Inspection Tower: The contractor shall construct an inspection tower. The tower shall be constructed using pressure treated wood. The floor elevation of the tower shall be 10 feet above the existing ground elevation. The floor area shall be 8’ by 8’, constructed of 2”x 8” joists, 16” O.C. with ¾” plywood supported by four 6” x 6” posts. The perimeter of the floor area shall be protected by a four-foot high wall constructed of 2” x 4” studs and ½” inch plywood. The floor area shall be covered with a corrugated tin roof. The roof shall provide a minimum of 6’-6” of head room below the support beams. Access shall be provided by wooden steps with a hand rail.

10.7. Traffic Control: The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. The Contractor shall provide all flag persons, signs, equipment, and other devices necessary to meet federal, state, tribal and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. At a minimum, one flag person shall be posted at each entrance to direct traffic to the site.

10.8. Site Closure: The Contractor shall be responsible for the closure of the debris site within [NUMBER] calendar days of receiving the last load of disaster-related debris. This closure shall include removal of site equipment, debris, and all remnants from the processing operation (such as temporary toilets, observation towers, security fence, etc.), grading the site, and restoring the site to pre-work conditions. The site will be restored in accordance with all state, tribal and local requirements. The Contractor is responsible for the proper disposal of non-burnable debris, ash, and wood chips. Disposal of the HHW debris is not the responsibility of the Contractor under this contract. The Contractor shall receive approval from the COR as to the final acceptance of a site closure. Final payment shall be released to the Contractor upon acceptance by the Contracting Officer.

11.0 **HOUSEHOLD HAZARDOUS WASTE (HHW) ISSUES**

11.1. The Contractor will be required to construct a containment area at the reduction site. This containment area will consist of an earthen berm with a non-permeable soil liner. The HHW containment area must be covered at all times with a non-permeable cover.

11.2. Any material which is found to be classified as HHW shall be reported immediately to the designated COR. This material shall be segregated from the remaining debris using a method which will allow the remaining non-HHW debris to be processed. All HHW debris will be moved and placed in the designated HHW containment area.

11.3. Disposal of the HHW debris will be by separate contract.

12.0 **CONTRACTOR HHW SPILLS**

12.1. The Contractor shall be responsible for reporting to the COR and cleaning up all HHW spills caused by the Contractor’s operations at no additional cost to the Government.

12.2. Immediate containment actions shall be taken as necessary to minimize effect of any spill or leak. Cleanup shall be in accordance with applicable federal, state, tribal and local laws and regulations.

12.3. Spills other than on-the-site shall be reported to the National Response Center and the Contracting Officer immediately following discovery. A written follow-up shall be submitted to the COR not later than seven days after the initial report. The written report shall be in narrative form, and as a minimum shall include the following:

a) Description of the material spilled (including identity, quantity, manifest number, etc.);
b) Determination as to whether or not the amount spilled is EPA / State reportable, and when and to whom it was reported;
c) Exact time and location of spill, including description of the area involved;
d) Receiving stream or waters;
e) Cause of incident and equipment and personnel involved;
f) Injuries or property damage;
g) Duration of discharge;
h) Containment procedures initiated;
i) Summary of all communications the Contractor has had with press, agencies, or Government officials other than COR; and
j) Description of cleanup procedures employed or to be employed at the site, including disposal location of spill residue.

13.0 **OTHER CONSIDERATIONS**

13.1. The Contractor shall supervise and direct the work, using qualified labor and proper equipment for all tasks. Safety of the Contractor’s personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

13.2. The Contractor must be duly licensed in accordance with the State’s statutory and regulatory requirements to perform the work. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the COR.

13.3. The Contractor shall be responsible for correcting any notices of violations issued as a result of the Contractor's or any subcontractor's actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the Government.

14.0 **MEASURMENTS**

14.1. Measurement of debris processed is based upon cubic yard measurements of debris delivered to the site.

14.2. Measurement of non-burnable debris and ash is based upon ton measurements measured at the landfill or final disposal site.

14.3. All efforts required in mobilization, site set-up, site close-out, and demobilization shall be considered as a total job.

15.0 **PAYMENT**

15.1. Payment for all debris sorted, segregated, processed, reduced, and disposed by burning will be made at the unit price per cubic yard.

15.2. The following costs are incorporated in the bidder’s unit price for burning: payment for managing and operating the debris sites; furnishing plant, material, labor, tools and equipment necessary to process / reduce / dispose of debris; and providing for traffic control, dust control, erosion control, inspection tower(s), lighting, ash containment, fire protection, permits, environmental monitoring, and safety measures.

15.3. Payment for loading and hauling non-burnable debris to the final disposal site will be by the ton.

15.4. The Contractor will be entitled to invoice for mobilization after all equipment is delivered to and operational at the work site. Demobilization costs will be due after all equipment is removed from the work site. Payment for mobilization and demobilization will be per job.

15.5. Payment for site preparation and site closure will be per job.

FIGURE 1

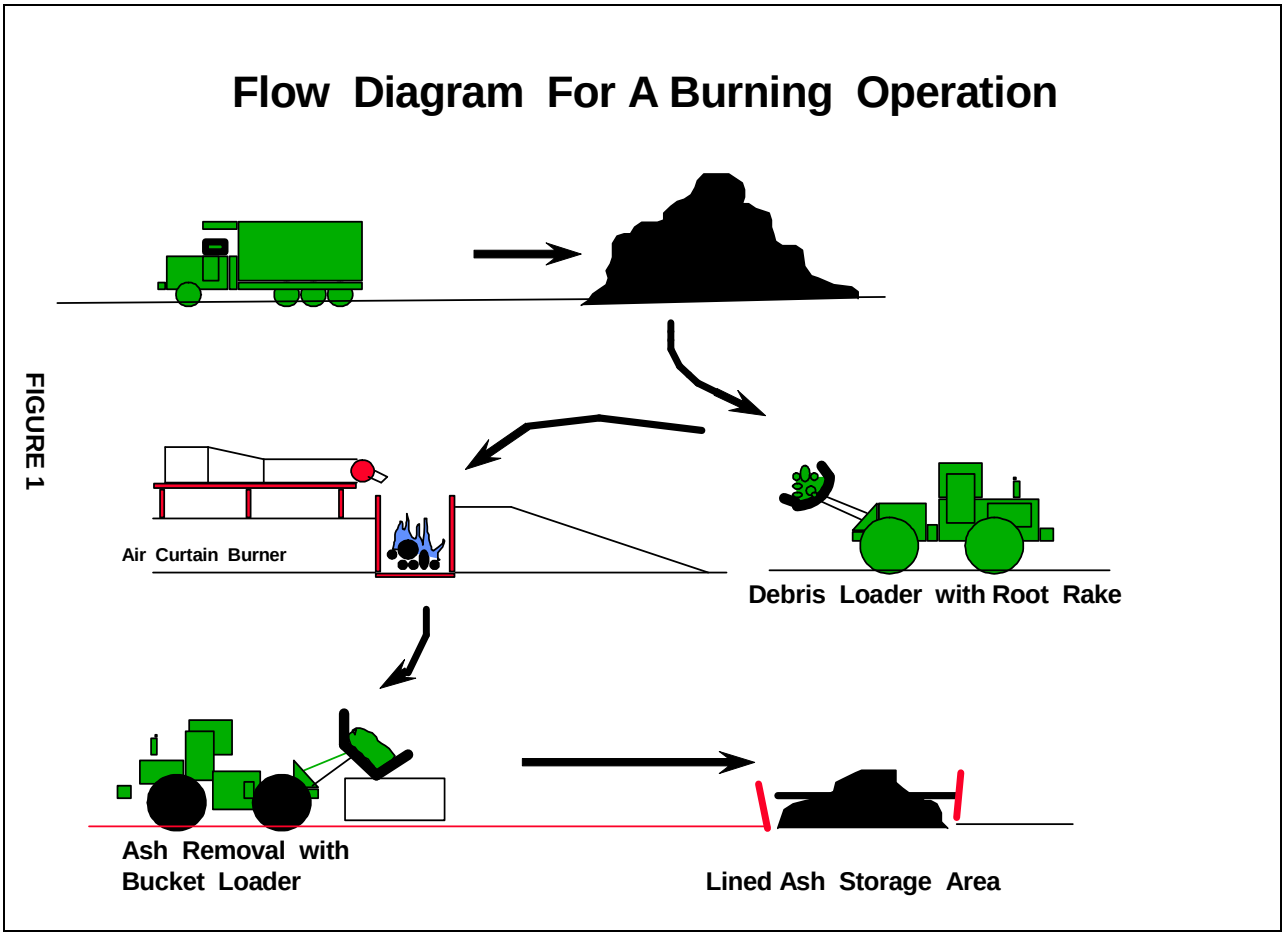

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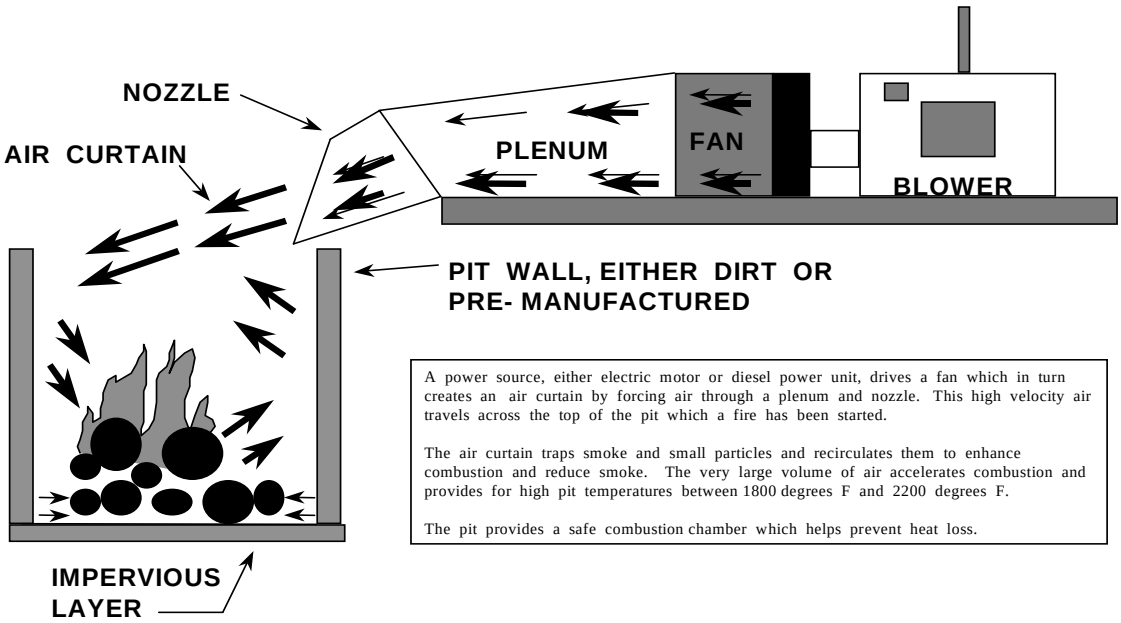
FIGURE 2

Overview of an Air Curtain Operation



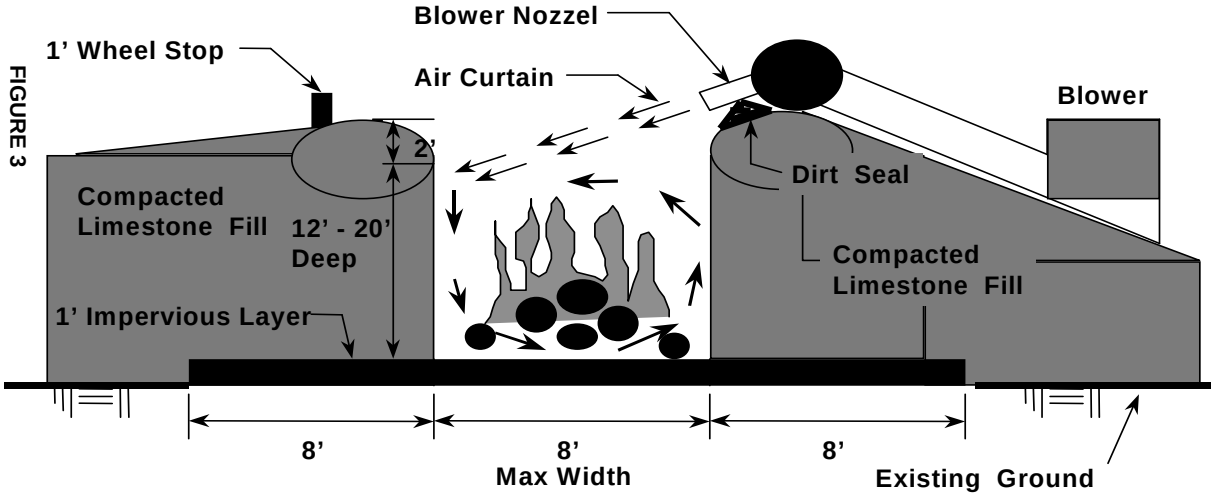
A power source, either electric motor or diesel power unit, drives a fan which in turn creates an air curtain by forcing air through a plenum and nozzle. This high velocity air travels across the top of the pit which a fire has been started.

The air curtain traps smoke and small particles and recirculates them to enhance combustion and reduce smoke. The very large volume of air accelerates combustion and provides for high pit temperatures between 1800 degrees F and 2200 degrees F.

The pit provides a safe combustion chamber which helps prevent heat loss.

FIGURE 3

Air Curtain Pit Burner



BIDDING SCHEDULE

CONTRACT NO._____

ITEM	DESCRIPTION	QUANTITY	UNIT OF ISSUE	UNIT PRICE	AMOUNT
1.	Mobilization	1	Job	XXX	**$**
2.	Reduction of Burnable Debris through the Air Curtain Incineration		CY	$	$
3.	Disposal of Non- Burnable Debris and Ash		Ton	$	$
4.	Site Preparation and Site Closure	1	Job	XXX	$

[DELETE THE NEXT BID ITEM IF CHIPPING & GRINDING IS NOT ALLOWED IN THE CONTRACT.]

5.	Reduction of Burnable Debris by Chipping and Grinding		CY	$	$
6.	Reduction of Stumps greater than 24” in diameter, but less than 36” in diameter		Stump	$	$
7.	Reduction of Stumps 36” in diameter, but less than 48” in diameter as		Stump	$	$
8.	Reduction of Stumps 48” in diameter or greater		Stump	$	$
9.	Demobilization	1	Job	XXX	$

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SCOPE OF WORK FOR
EQUIPMENT LEASING FOR CLEARING OF DEBRIS
RELATED TO
[NAME/NATURE OF DISASTER]
AT, IN, OR NEAR
[LOCATION OF RECOVERY EFFORTS]

1.0 GENERAL

The purpose of this contract is to provide debris clearing and removal response assistance to [LOCATION; I.E., "Michigan counties" or "Ingham and Eaton Counties in Michigan"] which have been declared disaster areas by the President because of the effects of [NAME OF DISASTER].

2.0 SERVICES

2.1. The Contractor shall provide specified equipment with operators and laborers for debris removal. The contractor shall provide all labor and materials necessary to fully operate and maintain (including fuel, oil, grease and repairs) the following:

[INSERT QUANTITY AND DESCRIPTION FROM EQUIPMENT LIST]

2.2. The Contractor shall provide the crews for [INITITIAL TIME; I.E., "two weeks" or "not to exceed either time or dollar amount"] with a Government option to extend for up to an additional [EXTENSION TIME; I.E., "one week"].

2.3. All hourly equipment rates include the cost of the operator, supervision, maintenance, fuel, repairs, overhead, profit, insurance, and any other costs associated with the equipment and personnel.

2.4. All hourly manpower rates include the cost of protective clothing (to include hard-hats and steel-toed boots), fringe benefits, hand tools, supervision, transportation and any other costs.

2.5. The work shall consist of clearing and removing any and all "eligible" debris (see section 3.0 for a definition of eligible debris) as directed by the Contracting Officer's Representative (COR). Work will include: 1) loading the debris, 2) hauling the debris to an approved dumpsite, and 3) dumping the debris at the dumpsite. Ineligible debris will not be loaded, hauled, or dumped under this contract. This work will involve primarily clearing the right-of-way (ROW) of streets and roads.

2.6. The Contractor shall not move from one designated work area to another designated work area without prior approval from the COR.

2.7. The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, tribal and local governments or agencies, or of any public utilities.

2.8. The Contractor shall comply with local, tribal, state and federal safety and health requirements.

3.0 DEBRIS CLASSIFICATION

3.1. Eligible Debris. Debris that is within the scope of this contract falls under three possible classifications: Burnable, Non-Burnable, and Recyclable. Debris that is classified Household Hazardous Waste (HHW) is not to be transported by this contract.

3.2. Burnable Debris. Burnable debris includes all biodegradable matter except that included in the following definitions of other categories of debris. It includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs; tree stumps with base cut measurements less than two feet; untreated structural timber; untreated wood products; and brush.

3.3. Non-Burnable Debris. Non-burnable debris includes, but is not limited to, treated timber; plastic; glass; rubber products; metal products; dry wall; cloth items; non-wood building materials; carpeting; recyclable debris including metal products (i.e., mobile trailer parts, household appliances [white metal], and similar items), and uncontaminated soil.

3.4. Household Hazardous Waste (HHW). Household hazardous wastes, such as petroleum products, paint products, etc., and known or suspected hazardous materials such as asbestos, lead-based paint, or electrical transformers shall be removed by others. Coordination for hazardous debris removal is the responsibility of the Government.

4.0 **DUMPSITES**

4.1. The Contractor shall use only debris dumpsites designated and approved by the COR.

4.2. The dumpsite operator shall direct all dumping operations. The Contractor shall cooperate with the dumpsite operator to facilitate effective dumping operations.

5.0 **PERFORMANCE SCHEDULE**

5.1. The Contractor shall commence mobilization immediately upon award of the contract and designation of work areas by the COR and will commence debris removal operations within 24 hours of Notice to Proceed.

5.2. The Contractor shall work during daylight hours for [INSERT] hours per day, [INSERT] days per week.

6.0 **EQUIPMENT**

6.1. All trucks and other equipment must be in compliance with all applicable federal, state, tribal and local rules and regulations. Any truck used to haul debris must be capable of rapidly dumping its load without the assistance of other equipment; be equipped with a tailgate that will effectively contain the debris during transport and permit the truck to be filled to capacity; and measured and marked for its load capacity. Sideboards or other extensions to the bed are allowable provided they meet all applicable rules and regulations, cover the front and both sides, and are constructed in a manner to withstand severe operating conditions. The sideboards are to be constructed of 2" by 6" boards or greater and not to extend more than two feet above the metal bed sides. The Contracting Officer's representative must approve all requests for extensions. Equipment will be inspected prior to its use by the Contractor using applicable U.S. Army Corps of Engineers forms. The forms will be provided to the Government after completion.

6.2. Trucks and other heavy equipment designated for use under this contract shall be equipped with two signs, one attached to each side. A total of [QUANTITY] signs will be provided by the Government and are to be returned to the Government prior to issuance of final payment. A fee of $[AMOUNT] will be assessed against the final payment for each lost sign.

6.3. Prior to commencing debris removal operations, the Contractor shall present to the Government's representative all trucks or trailers that will be used for hauling debris, for the purpose of determining hauling capacity. Hauling capacity, in cubic yards, will be recorded and marked on each truck or trailer. Each truck or trailer will also be numbered for identification. The Government reserves the right to re-measure trucks and trailers at any time during the contract and to use re-measurements as the basis for calculating loads for payment purposes.

6.4. Trucks or equipment that are designated for use under this contract shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled for others with debris hauled under this contract.

7.0 **REPORTING**

7.1. The Contractor shall submit a report to the COR by close of business each day of the term of the contract. Each report shall contain, at a minimum, the following information:

a) Contractor's Name;
b) Contract Number;
c) Daily and cumulative hours for each piece of equipment; and
d) Daily and cumulative hours for personnel, by position.

8.0 **OTHER CONSIDERATIONS**

8.1. The Contractor shall supervise and direct the work, using qualified labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

8.2. The Contractor must be duly licensed in accordance with the State's statutory requirements to perform the work. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the COR prior to issuance of a notice to proceed.

8.3. The Contractor shall be responsible for taking corrective action for any notices of violations issued as a result of the Contractor's or any subcontractor's actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the Government.

8.4. The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. The Contractor shall provide all flag persons, signs, equipment, and other devices necessary to meet federal, state, tribal and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. At a minimum, one flag person should be posted at each approach to the work area.

9.0 **PAYMENT**

9.1. The Contractor will be entitled to invoice for 60% of the mobilization and demobilization line item after all equipment is delivered to the designated work site. The remaining 40% will be due after all equipment is removed from the work site, all vehicle signs have been returned to the Government, and the Contractor has submitted a proper invoice.

9.2. Payment for work completed will be based on verified hours worked from the daily operational report. Equipment down time resulting from equipment failure, routine maintenance and fueling that exceeds 15 minutes of a work hour will be considered unacceptable work and non-payment for one half of that hour and the number of work hours will be reduced to exclude the down time (the minimum reduction shall be one-half hour).

9.3. All payments made under this contract will be in accordance with PAYMENTS clauses located in other sections of this contract.

10.0 **OPTIONS**

10.1. The option items listed in Schedule B (the Bid Schedule) are for the purpose of extending this contract for seven days at a time. These options will be exercised at the discretion of the Government in accordance with the OPTION TO EXTEND SERVICES clause located elsewhere in this contract.

11.0 **ATTACHMENTS**

11.1. Daily Report Format

11.2. Sample Bidding Schedule

11.3. Operations Report

11.4. Equipment Pick List

DAILY REPORT						
CONTRACTOR: CONTRACT NO. :					DATE OF REPORT:	
Truck No.		**Capacity**	**Burn Site Trips**	**CY Totals**	**Landfill Trips**	**CY Totals**
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
	DAILY GRAND TOTALS			**CY**		**CY**

CONTRACT NO._____

BIDDING SCHEDULE					
ITEM	**DESCRIPTION**	**HOURS**	**U/I**	**U/P**	**AMOUNT**
001	Mobilize Equipment/Demobilize Equipment	JOB			
002	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
003	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
004	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
005	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
006	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
007	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
008	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
009	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
010	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
011	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
012	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
013	One (1) Truck, Dump, 16-20 cy capacity, with Operator	140.00			
014	One (1) Loader, Front-end, 3-5 cy capacity, with Operator	140.00			
015	One (1) Loader, Front-end, 3-5 cy capacity, with Operator	140.00			
016	One (1) Knuckleboom, 10 ton lifting capacity, with Operator	140.00			
017	Four (4) Laborers with Chainsaws, 16”min bar, traffic flags, and misc. small tools (axes, shovels, safety equip.)	140.00			
018	One (1) Truck, Pickup, ½-1 Ton, with crew foreman, and cellular phone.	140.00			
019	One (1) Track Hoe, 2-3 cy bucket with operator	100.00			
020	One (1) Low Bed Equipment Trailer , 20 Ton capacity, and Tractor Truck with operator	70.00			
		TOTAL			

CONTRACT NO._____

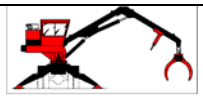
BIDDING SCHEDULE					
ITEM	**DESCRIPTION**	**HOURS**	**U/I**	**U/P**	**AMOUNT**
	FIRST OPTION PERIOD				
021	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
022	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
023	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
024	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
025	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
026	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
027	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
028	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
029	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
030	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
031	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
032	One (1) Truck, Dump, 16-20 cy capacity, with Operator	70.00			
033	One (1) Loader, Front-end, 3-5 cy capacity, with Operator	70.00			
034	One (1) Loader, Front-end, 3-5 cy capacity, with Operator	70.00			
035	One (1) Knuckleboom, 10 ton lifting capacity, with Operator	70.00			
036	Four (4) Laborers with Chainsaws, 16” min bar, traffic flags, and misc. small tools (axes, shovels, safety equip.)	70.00			
037	One (1) Truck, Pickup,1/2 -1 Ton, with crew foreman, and cellular phone.	70.00			
038	One (1) Track Hoe, 2-3 cy bucket, with operator	50.00			
039	One (1) Low Bed Equipment Trailer, 20 Ton capacity, and Tractor Truck, with operator	35.00			
		TOTAL			

CONTRACT NO._____

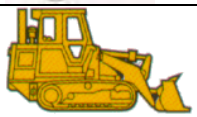
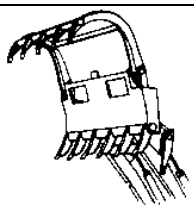
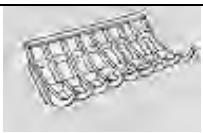
OPERATIONAL REPORT

EQUIPMENT	TOTAL HOURS WORKED THIS DAY	TOTAL HOURS IDLE THIS DAY
DUMP TRUCK #		
DUMP TRUCK #		
DUMP TRUCK #		
DUMP TRUCK #		
DUMP TRUCK #		
DUMP TRUCK #		
DUMP TRUCK #		
DUMP TRUCK #		
DUMP TRUCK #		
DUMP TRUCK #		
F.E. LOADER#		
F.E. LOADER#		
DOZER #		
TRACK HOE #		
KNUCKLEBOOM #		
KNUCKLEBOOM #		
KNUCKLEBOOM #		
PICKUP TRUCK #		
LABOR CREW #		

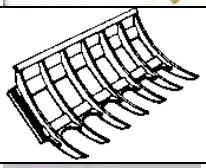
EQUIPMENT PICK LIST

ITEM	PICTURE	DESCRIPTION	LIKE
1.		Truck, Pickup, .5/.75 Ton, with Operator	Ford F-150
2.		Truck, Dump, 6-8 cy capacity, with Operator	
3.		Truck, Dump, 16-20 cy capacity, with Operator	GMC C-Series Trucks
4.		Truck, Dump, 25-30 cy capacity, with Operator	
5.		Excavator, Hydraulic, 1-2 cy bucket, 128 Net Hp, with Operator	CAT 320 CASE 9030B
6.		Excavator, Hydraulic, 2-3 cy bucket, 168 Net Hp, with Operator	CAT 325
7.		Excavator, Hydraulic, 3-5 cy bucket , 286 Net Hp, with Operator	CAT 350
8.		Knuckleboom, 10 ton lifting capacity, with Operator	Barko 160A
9.		Attachment, Grapple, hydraulically operated clam-type bucket with 360-degree rotation, for use in demolition, and clearing	

EQUIPMENT PICK LIST

ITEM	PICTURE	DESCRIPTION	LIKE
10.		Attachment, Grapple, thumb, a demolition or trash grapple. Can be used with the standard excavator bucket. Thumb section can be stiff arm mounted or controlled with a hydraulic cylinder.	
11.		Attachment, Clamp, Bucket	
12.		Loader, tracked, 1-2 cy blade capacity, with Operator	CAT 933
13.		Loader, tracked, 2-3 cy blade capacity, with Operator	CAT 953
14.		Loader, tracked, 3-5 cy blade capacity, with Operator	CAT 973
15.		Loader, Front-end, wheeled, 3-5 cy capacity, with Operator	CASE 821B CAT 938F
16.		Loader, Front-end, 3-5 cy capacity, with Operator	CAT 960F
17.		Loader, Front-end, 3-5 cy capacity, with Operator	CAT 970F CASE 921B
18.		Rake, Loader with top clamp	
19.		Attachment, Loader Rake, mounts in place of the bucket on 4-wheel drive or crawler loaders. Loads debris at truck height. Long curved teeth for maximum load capacity. Bucket cylinder controls positions for digging depth or transporting.	
20.		Grader, Motor, 12-foot blade, 130-140 net Hp	CAT 12H Champion 710 Series IV
21.		Dozer, tracked, 1-2 cy Blade Capacity, with Operator	CAT D5

EQUIPMENT PICK LIST

ITEM	PICTURE	DESCRIPTION	LIKE
22.		Dozer, tracked, 2-3 cy Blade Capacity, with Operator	CAT D7G
23.		Dozer, tracked, 22'6" Blade length, 405 Net Hp, with Operator	Caterpillar D9R
24.		Rake, Clearing and Stacking, Dozer mounted; lighter-weight construction. Curved teeth lift and stack trees and debris while sifting out dirt.	
25.		Chainsaw, not less than 20” bar, with Operator	
26.		Chainsaw, Gas engine, not less than 14” bar, with Operator	
27.		Backhoe, with loader, 1 cy bucket, with Operator	CASE 4-390
28.		Backhoe, with loader, 1.5 cy bucket, with Operator.	JCB 217 4WD
29.		Attachment, Thumb	
30.		Attachment, Clamshell bucket	
31.		Skidder,	
32.		Loader, Mini, Width of vehicle not to exceed 6 feet, for use in restricted maneuver area.	Bobcat 553 JCB 165
33.		Burner, Air Curtain, fully self-contained system that includes a power plant, hydraulic drive system blower fan and fuel tank. A diesel injection system and/or a propane ignition system are offered as light-up options.	Air Burners, Inc. Model “S”

EQUIPMENT PICK LIST

ITEM	PICTURE	DESCRIPTION	LIKE
34.		Burner, Air Curtain, mobile unit, 6 cylinder Diesel engine, minimum 89 HP (66 kW), full enclosure; burn container 4" (102 mm) thick walls; refractory panels filled with thermal ceramic material. Instrument panel, tachometer, hour meter, ampere meter, key switch, oil pressure and water temperature gauges, with safety shutdown feature and adjustable locking throttle, minimum 15,500 cfm (439 m3/min). Centrifugal fan, air output approx. 165 mph (266 km/h) at fan, 110 mph (177 km/h) at air spouts. Manifold minimum 1/8" (3.2 mm) steel, solid-weld assembly; air vents inject air at 20-degree angle to maintain proper air curtain. Length: 35' (10.70 m); 2 sections: 15' (4.60 m) each; T-section at 5' (1.50 m). Weight approx. 7,200 lbs (3,266 kg). 50 gallon (189 liter) minimum fuel tank capacity. Air quality meets or exceeds applicable US-EPA regulations.	Air Burners, Inc. Mobile System Model "T- 359"
35.		Grinder, Tub, with 300-400 Hp engine, 8-foot diameter tub	Portec Model 20900
36.		Laborer, with hand tools (i.e., shovels, axes, rakes, traffic-control flags, etc.)	

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SAMPLE EMERGENCY DEMOLITION SERVICES AGREEMENT

(From FEMA Debris Management Training Module, G202; modified slightly for Michigan conditions)

ARTICLE I

AGREEMENT BETWEEN PARTIES

This Agreement is entered into this _____ day of (month / year), by and between the (local jurisdiction), a political subdivision of the State of Michigan, hereinafter called the "(CITY / COUNTY / VILLAGE / TOWNSHIP)" and (name of contractor), a corporation formed and licensed under the laws of the (insert state name), hereinafter called the "CONTRACTOR".

ARTICLE II

SCOPE OF WORK

This contract is entered into pursuant to a request for proposal by the CITY for the removal of debris, structural materials and related matter, resulting from damages caused by the (type of disaster / date). It is the intent of this contract to provide equipment and manpower, whether directly by CONTRACTOR or by subcontractors hired by CONTRACTOR, to remove all hazards to life and property in the affected portions of CITY.

Clean-up, demolition and removal will be limited to (1) that which is determined to be in the interest of public safety as may be established by resolution of CITY; and (2) that which is considered essential to the economic recovery of the affected area. The work shall consist of the providing of equipment and labor, together with all fuels, lubricants, and other necessary components, to clean up and remove debris as directed by CITY.

It is understood and agreed that (number) homes require demolition *(assume addresses are attached to document)* within the corporate limits of CITY, together with the possibility of additional homes located immediately adjacent to the affected area, but outside the corporate limits of CITY. These non-corporate limit homes are the subject of mutual aid resolutions or agreements between the CITY and adjacent Township, and were damaged by the (type of disaster / date).

Work shall be limited to the removal of residential structures or debris from structures, and shall <u>not</u> include commercial properties, specifically including but not necessarily limited to properties owned by (names of commercial enterprises), or any other commercial structure.

ARTICLE III

SCHEDULE OF WORK

The work under this contract will commence as soon as reasonably possible after execution of this Agreement, but in any event, not later than (date). Work shall be demolition and removal of debris. Work shall be provided at specific properties with direct loading and immediate removal or hauling of debris from each property rather than stockpiling from multiple sites prior to removal of debris from a general area.

Work shall also include securing each site with safety fencing or otherwise as provided by applicable code, whether state or local. Backfilling of sites of excavation and other restoration of properties is not to be provided unless specifically directed otherwise, in writing, at the direction expense of the affected property owner.

ARTICLE IV

PRICE

The lump sum price for performing the work stipulated in this contract document is not to exceed (amount, in both narrative and figure formats, e.g., Nine Hundred and Fifty Thousand and 00/000 [$950,000] Dollars).

ARTICLE V

CONTRACTOR'S OBLIGATIONS

CONTRACTOR shall supervise accomplishment of the work effort directed using skillful labor and proper equipment for all tasks. Safety of the CONTRACTOR'S personnel and equipment, or that of subcontractors, is the responsibility of the CONTRACTOR and subcontractor. Additionally, the CONTRACTOR shall pay for all materials, personnel, taxes, and fees, if any, necessary to perform under the terms of the contract. Any unusual, concealed, or conditions are to be immediately reported to the CITY.

Caution and care shall be required and exercised by CONTRACTOR or its subcontractors not to cause any additional damage to sidewalks, roads, buildings, or other permanent fixtures, structures, existing utilities, and/or trees. The CONTRACTOR shall be responsible for damages to existing facilities. Any unnecessary damage will be repaired at the CONTRACTOR'S expense.

CONTRACTOR shall provide prompt billing to CITY by property or site affected, unless otherwise agreed with CITY. It is understood that subcontractors shall be retained using local, average and Blue Book prices for construction labor and equipment, with equipment billing rates to be considered wet (with fuels and lubricants included) and also including necessary operators. These rates shall not exceed FEMA approved equipment rates. Billing shall be submitted weekly with amount due as hereinafter provided in Article V.

CONTRACTOR shall be paid an amount equal to ten percent (10%) of all subcontractors' billings to cover the administrative costs of this contract and arranging for such contractors. CONTRACTOR'S foreman, if any, will be billed at an hourly rate.

Only actual costs per site, or property affected, will be billed, with the exception of the administrative fee and CONTRACTOR'S foreman or supervisor fee as above-noted.

ARTICLE VI

PAYMENT

The CONTRACTOR shall submit certified pay requests for completed work. The CITY shall have 10 calendar days to approve or disapprove, with reasons in writing, the pay request. The CITY shall pay the CONTRACTOR for its performance under the contract within 20 days of approval of the pay estimate. On contracts over 30 days in duration, the CITY shall pay the CONTRACTOR a pro-rata percentage of the contract amount on a monthly basis, based on the amount of work completed and approved in that month. The CITY will remunerate the CONTRACTOR within 30 days of the approved application for payment after which interest will be added at a rate of five percent (5%) per annum. Payments shall be subject to a retainer of ten percent (10%) on each payment. Retainer shall be released upon substantial completion of the work. Funding for this contract is authorized pursuant to Public Law of the State, (legal citation, e.g., 390 PA 1976, as amended) and City (legal citation, e.g., Charter, Chapter 3).

ARTICLE VII

CHANGE ORDERS

If the scope of work is changed by the CITY, the change in price and contract time will be promptly negotiated by the parties, prior to commencement of work.

ARTICLE VIII

CITY'S OBLIGATIONS

CITY'S representatives shall furnish all necessary information for commencement of the work and costs of any construction permits, and costs for disposal site, to include tipping fees, and authority approvals for all services provided. A representative will be designated by CITY for inspecting the work and answering any onsite questions. The CITY shall designate areas where work is to be performed. Copies of "Right-of-Entry" Agreements, where they are required by state or local law for private property, shall be furnished to the CONTRACTOR by CITY.

ARTICLE IX

TERMINATION

The CITY may terminate the contract for failure to perform or default by the CONTRACTOR or its subcontractors

ARTICLE X

INSURANCE, BONDS AND INDEMNIFICATION

CONTRACTOR shall furnish proof of Workers' Compensation Coverage, Automobile Liability Coverage, and Comprehensive General Liability Coverage, Performance and Payment Bonds, for itself and any subcontractors, unless otherwise agreed by separate written document executed by CITY. The CONTRACTOR and its subcontractors shall be solely responsible for any intentional wrongdoing or acts of negligence by themselves or their employees.

CITY

By_____
Mayor

And_____
City Manager

(NAME OF CONTRACTOR)

By_____
President

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SAMPLE RIGHT-OF-ENTRY PERMIT
(INCLUDES HOLD HARMLESS AND INSURANCE CLAUSES)

(From FEMA Debris Management Training Module, G202; modified slightly for Michigan conditions)

Right-of-Entry Permit No._____

Property Address / Description

City Name (Owner or Tenant)

County / Date

RIGHT-OF-ENTRY

I certify that I am the owner, or an owner's authorized agent, of the property described above. I grant, freely and without coercion, the right of access and entry to said property to the (eligible applicant), its agents, contractors, and subcontractors, for the purpose of demolishing, removing and/or clearing any or all storm-generated debris of whatever nature from the above-described property.

HOLD HARMLESS

I understand that this permit is not an obligation upon the government to perform debris removal. I agree to hold harmless the United States Government, the Federal Emergency Management Agency (FEMA), the State of Michigan, and any of their agencies, agents, contractors, and subcontractors, for damages of any type whatsoever, either to the above-described property or to persons situated thereon. I release, discharge, and waive any action, either legal or equitable, that might arise by reason of any action of the above entities, while removing storm-generated debris from the property. I will mark any sewer lines, septic tanks, water lines, and utilities located on the described property.

DUPLICATION OF BENEFITS

Most homeowner's insurance policies have coverage to pay for removal of storm-generated debris. I understand that federal law (42 United States Code 5155 et seq.) requires me to reimburse (eligible applicant) the cost of removing the storm-generated debris to the extent covered in my insurance policy. I also understand that I must provide a copy of the proof / statement of loss from my insurance company to (eligible applicant). If I have received payment, or when I receive payment, for debris removal from my insurance company, or any other source, I agree to notify and send payment and proof / statement of loss to (eligible applicant). I understand that all disaster related funding, including that for debris removal from private property, is subject to audit.

Sworn and attested: Witnessed:

All owners must sign below.

Print Name_____ Print Name_____

Signature_____ Signature_____

Name of Insurance Company:_____

Policy Number:_____

Please do not remove the following items:_____

DEBRIS REMOVAL APPLICANT'S CONTRACTING CHECKLIST (FEMA FACT SHEET 9580.201 – APRIL 10, 2006)

Source: FEMA web site (edited to fit plan format)

Overview

To be eligible for reimbursement under the Public Assistance Program, contracts for debris removal must meet rules for Federal grants, as provided for in 44 CFR Part 13.36 Procurement. Public Assistance applicants should comply with their own procurement procedures in accordance with applicable State and local laws and regulations, provided that they conform to applicable Federal laws and standards identified in Part 13. The following guidance is provided to assist Public Assistance applicants in the procurement process.

Contracting Process Checklist

- Use competitive bidding procedures. Complete and document a cost analysis to demonstrate price reasonableness on any contract or contract modification where adequate price competition is lacking, as detailed in 44 CFR 13.36(f).
- Provide a clear and definitive scope of work and monitoring requirements in the request for proposals/bids. Use acceptable emergency contracting procedures that include an expedited competitive bid process only if time does not allow for more stringent procedures.
- Require bidders to provide copies of references, licenses, financial records, and proof of insurance and bonding.
- Obtain review from your legal representative of your procurement process and any contract to be awarded to ensure they are in compliance with all Federal, State, and local requirements.
- Document procedures used to obtain/award contracts (procurement information, bid requests and tabulations, etc).
- Use load ticket requirement to record with specificity (e.g., street address) where debris is picked up and the amount picked up, hauled, reduced and disposed of.

FEMA will, when requested by applicants, assist in the review of debris removal contracts. However, such a review does not constitute approval.

Contract Provisions Checklist

All contracts must contain/reflect the following provisions:

- All payment provisions must be based on unit prices.
- No payments may be based on time and material costs unless limited to work performed during the first 70 hours of actual work following a disaster event.
- That payment will be made only for debris that FEMA determines eligible, referencing FEMA regulations and Public Assistance guides and fact sheets. (This is an optional provision to protect the applicant, and is used only following a major disaster declaration.)
- An invoice provision requiring contractors to submit invoices regularly and for no more than 30-day periods.
- A "Termination for Convenience" clause allowing contract termination at any time for any reason.
- A reasonable limit on the period of performance for the work to be done.
- A subcontract plan including a clear description of the percentage of the work the contractor may subcontract out and limiting use of subcontractors to only those you approve.
- The preference that the contractor use mechanical equipment to load and reasonably compact debris into the trucks and trailers.
- The requirement that the contractor provide a safe working environment, including properly constructed monitoring towers.
- Option of a unit price for extracting from ground and removing FEMA-eligible stumps (only for stumps with diameters larger than 24 inches, measured 24 inches above the ground, and with 50% or more of the root ball exposed), or including all stumps in the unit price.
- Requirement that all contract amendments and modifications be in writing.
- Requirement that contractor obtain adequate payment and performance bonds and insurance coverage.

Pre-Disaster and Stand-By Contracts Checklist

- The solicitation for a pre-disaster contract must adequately define in the proposed scope of work all the potential types of debris, typical haul distances, and size of events for which the contract may be activated.
- You may request bids for multiple scenarios for varying sizes of events.
- To ensure reasonable debris removal costs, award pre-disaster debris removal contracts based on either unit prices (volume or weight) or time and material.
- If the contract is awarded on a time and material basis, it should be limited to no more than 70 hours of actual clearance and removal operations.
- After the initial 70-hour period, payment should be on a unit price basis (volume or weight).

Avoidance Checklist

- **DO NOT:** Award a debris removal contract on a sole-source basis.
- **DO NOT:** Sign a contract (including one provided by a contractor) until it has been thoroughly reviewed by your legal representative.
- **DO NOT:** Allow any contractor to make eligibility determinations, since only FEMA has that authority.
- **DO NOT:** Accept any contractor's claim that it is "FEMA certified." FEMA does not certify, credential, or recommend debris contractors.
- **DO NOT:** Award a contract to develop and manage debris processing sites unless you know it is necessary, and have contacted the State for technical assistance concerning the need for such operations. Temporary debris storage and reduction sites are not always necessary.
- **DO NOT:** Allow separate line item payment for stumps 24 inches and smaller in diameter; these should be treated as normal debris.
- **DO NOT:** "Piggyback" or utilize a contract awarded by another entity. Piggybacking may be legal under applicable state law; however, the use of such a contract may jeopardize FEMA funding.
- **DO NOT:** Award pre-disaster/stand-by contracts with mobilization costs or unit costs that are significantly higher than what they would be if the contract were awarded post-disaster. Such contracts should have variable mobilization costs depending upon the size of the debris work that may be encountered.

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DEBRIS MANAGEMENT CONTRACTS COMPARATIVE MATRIX

Type of Contract	Structure and Use	Required Provisions	Advantages	Disadvantages	Monitoring	Documentation
UNIT PRICE	Uses units of measure (CY, T, each) and prices to develop line item costs and total contract costs. Used when scope of work is difficult to quantify. Bid proposals are based on applicant-estimated quantities and units of work.	Specific documentation requirements, based on quantifiable units such as load tickets, and payment.	Scope of work may be adjusted easily at a known cost. Accurate account of actual quantities when work is complete. Simplicity of contract encourages competition. Low risk for contractors.	Possibility of contractor fraud if operations are not closely monitored. Trucks require measurement and loads accurately documented. Segregated curbside collection may complicate the scope of work.	Labor intensive	Load ticket system Monitors at collection points and where the debris is unloaded (DMS / TDSR Site or final disposition)
TIME AND MATERIAL	Paid on an hourly rate for labor, materials, and equipment. A know quantity of work is not established prior to the contractor beginning work.	Capped by the period of performance and/or monetary ceiling. Price for equipment applies only when the equipment is in use. Hourly rate for equipment includes fuel, maintenance, and repair. Bids should include all overhead costs. Specific hours the contractor is to perform work (to ensure monitoring staff is present to document activity). No guarantee of a minimum number of hours. If multiple contracts are awarded, the period of performance should run concurrently rather than consecutively.	Good for response activities. Extremely flexible; not limited by a specific scope of work. Range of uses: appropriate clearance of major access routes or roads to critical facilities.	Requires close contractor oversight and direction as to work to be performed. Requires documentation of actual hours worked by equipment and operators. Reasonable hourly rates may be difficult to establish if not competitively bid. Equipment specifications may have to be generalized in order to encourage competition. Requires full-time trained monitors to document work completed and verify hours worked.	Labor intensive	Intense Actual labor and equipment must be accounted for during entire performance period.

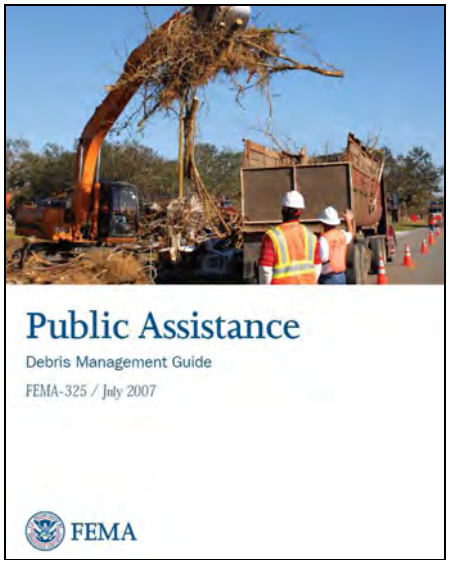
DEBRIS MANAGEMENT CONTRACTS COMPARATIVE MATRIX (cont.)

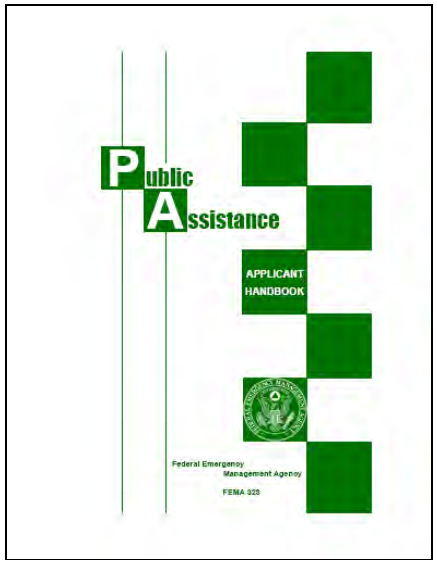
Type of Contract	Structure and Use	Required Provisions	Advantages	Disadvantages	Monitoring	Documentation
ALL LUMP SUM	Establishes a fixed contract based on the applicant scope of work specified in the bid solicitation. Used when the scope of work is clearly defined by the applicant, including quantity, type, and location of debris.	Specific process for a change order request, exact quantity of debris, and types of debris. Provision to cover if the collection or unloading location changes after the contract is awarded.	Cost is established at the bid opening. Easy to determine when the work is complete.	Scope of work must be very specific to avoid change orders. Often difficult to quantify debris and identify the types of debris requiring collection.	Minimum	Amount of debris collected, reduced / recycled, and disposed of will be required to establish reasonable price.
LUMP SUM – Collection Area Method	Used when a well defined area can be provided for bidding purposes.	Specific process for a change order request, exact quantity of debris, and types of debris. Provision to cover if the collection or unloading location changes after the contract is awarded.		Scope of work has to be accurately quantified to minimize change orders. Estimating the amount of debris to be brought to the rights-of-way difficult to determine. High probability of change orders if estimates are based on speculation.	Minimum	Amount of debris collected, reduced / recycled, and disposed of will be required to establish reasonable price.
LUMP SUM – Collection Path Method	Defines who many times a curbside collection will be completed on a particular street or through a well defined area.	Specific process for a change order request, exact quantity of debris, and types of debris. Provision to cover if the collection or unloading location changes after the contract is awarded.	Possibility of fewer change orders since the scope of work is better defined. Average management duties.	Up-to-date street information and plans to be included in the scope of work. Requires cooperation of the public to place only eligible debris at the curb and participate in segregating materials. Intense public information campaign required.	Minimum	Amount of debris collected, reduced / recycled, and disposed of will be required to establish reasonable price.

DEBRIS MANAGEMENT RECORD KEEPING

The State and Local Disaster Debris Management Teams will use the following forms / formats to document debris management costs and other aspects of the debris management operation. These forms / formats are recommended in FEMA Publications 325, "Public Assistance Debris Management Guide" and 323, "Public Assistance Applicant Handbook," for use in incidents that involve activation of the PAGP. For brevity purposes, not all of the forms / formats will be shown in this Attachment, and those that are have been reduced in size. All are available in electronic format from the FEMA website (www.fema.gov/government/grant/pa/forms.shtm or http://docnet.fema.gov) as well as from FEMA staff. (The most current version of the form / format will be used at the time of the incident.)

Form Number	Form Title	Debris Management Record Keeping Purpose
FF90-123	Force Account Labor Summary Record	Used to record force account personnel costs.
FF90-124	Materials Summary Record	Used to record supplies / materials taken out of stock or purchased.
FF90-125	Rented Equipment Summary Record	Used to record the costs of rented or leased equipment.
FF90-126	Contract Work Summary Record	Used to record the costs of work done by contract.
FF90-127	Force Account Equipment Summary Record	Used to record force account equipment use costs.
FF90-128	Applicant's Benefits Calculation Worksheet	Used to record employee fringe benefits.
FF90-91D	Project Worksheet – Photo Sheet	Used for photographs and descriptions related to a PAGP project.
	Tower Monitor Log	Used to record information on debris deliveries to TDSR Sites.
	Roving Monitor Report	Used to record observations made by roving debris monitors at debris loading sites.
	Daily Issue Log	Used to record issues identified by contractors and/or debris monitors.
	Truck Certification Form	Used to record specifications of trucks used in the debris management operation.
	Load Ticket	Used to certify load contents for debris deliveries to TDSR Sites.





DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
FORCE ACCOUNT LABOR SUMMARY RECORD

PAGE ____ OF ____

O.M.B. No. 1660-0017
Expires Otober 31, 2008

APPLICANT	PA ID NO.	PROJECT NO.	DISASTER
LOCATION/SITE		CATEGORY	PERIOD COVERING

DESCRIPTION OF WORK PERFORMED

NAME / JOB TITLE	DATES AND HOURS WORKED EACH WEEK								COSTS				
	DATE								TOTAL HOURS	HOURLY RATE	BENEFIT RATE/HR	TOTAL HOURLY RATE	TOTAL COSTS
NAME	REG.												
JOB TITLE	O. T.												
NAME	REG.												
JOB TITLE	O. T.												
NAME	REG.												
JOB TITLE	O. T.												
NAME	REG.												
JOB TITLE	O. T.												
NAME	REG.												
JOB TITLE	O. T.												
NAME	REG.												
JOB TITLE	O. T.												

TOTAL COST FOR FORCE ACCOUNT LABOR REGULAR TIME → $

TOTAL COST FOR FORCE ACCOUNT LABOR OVERTIME → $

I CERTIFY THAT THE ABOVE INFORMATION WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.

CERTIFIED	TITLE	DATE

FEMA Form 90-123, FEB 06 PREVIOUS EDTION OBSOLETE

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
MATERIALS SUMMARY RECORD

PAGE ____ OF ____

O.M.B. No. 1660-0017
Expires October 31, 2008

APPLICANT	PA ID NO.	PROJECT NO.	DISASTER
LOCATION/SITE		CATEGORY	PERIOD COVERING

DESCRIPTION OF WORK PERFORMED

VENDOR	DESCRIPTION	QUAN.	UNIT PRICE	TOTAL PRICE	DATE PURCHASED	DATE USED	INFO FROM (CHECK ONE) INVOICE	STOCK
	GRAND TOTAL →							

I CERTIFY THAT THE ABOVE INFORMATION WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.

CERTIFIED	TITLE	DATE

FEMA Form 90-124, FEB 06 PREVIOUS EDTION OBSOLETE

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
RENTED EQUIPMENT SUMMARY RECORD

PAGE ____ OF ____

O.M.B. No. 1660-0017
Expires October 31, 2008

APPLICANT	PA ID NO.	PROJECT NO.	DISASTER
LOCATION/SITE		CATEGORY	PERIOD COVERING

DESCRIPTION OF WORK PERFORMED

TYPE OF EQUIPMENT Indicate size, Capacity, Horsepower, Make and Model as Appropriate	DATES AND HOURS USED	RATE PER HOUR		TOTAL COST	VENDOR	INVOICE NO.	DATE AND AMOUNT PAID	CHECK NO.
		W/OPR	W/OUT OPR					
					GRAND TOTAL →			

I CERTIFY THAT THE ABOVE INFORMATION WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.

CERTIFIED	TITLE	DATE

FEMA Form 90-125, FEB 06 PREVIOUS EDITION OBSOLETE

DEPATRTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
CONTRACT WORK SUMMARY RECORD

PAGE ____ OF ____

O.M.B. No. 1660-0017
Expires October 31, 2008

APPLICANT	PA ID NO.	PROJECT NO.	DISASTER
LOCATION/SITE		CATEGORY	PERIOD COVERING

DESCRIPTION OF WORK PERFORMED

DATES WORKED	CONTRACTOR	BILLING/INVOICE NUMBER	AMOUNT	COMMENTS - SCOPE
		GRAND TOTAL →		

I CERTIFY THAT THE ABOVE INFORMATION WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.

CERTIFIED	TITLE	DATE

FEMA Form 90-126, FEB 06 PREVIOUS EDITION OBSOLETE

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
FORCE ACCOUNT EQUIPMENT SUMMARY RECORD

PAGE ____ OF ____

O.M.B. No. 1660-0017
Expires October 31, 2008

APPLICANT | PA ID NO. | PROJECT NO. | DISASTER

LOCATION/SITE | CATEGORY | PERIOD COVERING

DESCRIPTION OF WORK PERFORMED

TYPE OF EQUIPMENT		OPERATOR'S NAME	DATES AND HOURS USED EACH DAY		COSTS	
INDICATE SIZE, CAPACITY, HOURSEPOWER, MAKE AND MODEL AS APPROPRIATE	EQUIPMENT CODE NUMBER		DATE	TOTAL HOURS	EQUIPMENT RATE	TOTAL COST
			HOURS			
			HOURS			
			HOURS			
			HOURS			
			HOURS			
			HOURS			
			HOURS			
			GRAND TOTALS			

I CERTIFY THAT THE ABOVE INFORMATION WAS OBTAINED FROM PAYROLL RECORDS, INVOICES, OR OTHER DOCUMENTS THAT ARE AVAILABLE FOR AUDIT.

CERTIFIED | TITLE | DATE

FEMA Form 90-127, FEB 06 PREVIOUS EDITION OBSOLETE

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
APPLICANT'S BENEFITS CALCULATION WORKSHEET

PAGE ____ OF ____

O.M.B. No. 1660-0017
Expires October 31, 2008

APPLICANT | PA ID NO.

DISASTER | PROJECT NO.

FRINGE BENEFITS (by %)	REGULAR TIME	OVERTIME
HOLIDAYS		
VACATION LEAVE		
SICK LEAVE		
SOCIAL SECURITY		
MEDICARE		
UNEMPLOYMENT		
WORKER'S COMP.		
RETIREMENT		
HEALTH BENEFITS		
LIFE INS. BENEFITS		
OTHER		
TOTAL in % of annual salary		

COMMENTS

I CERTIFY THAT THE INFORMATION ABOVE WAS TRANSCRIBED FROM PAYROLL RECORDS OR OTHER DOCUMENTS WHICH ARE AVAILABLE

CERTIFIED BY | TITLE | DATE

FEMA Form 90-128, FEB 06 PREVIOUS EDTION OBSOLETE

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
PROJECT WORKSHEET - Photo Sheet

O.M.B. No. 1660-0017
Expires October 31, 2008

DISASTER FEMA _____ -DR- ____	PROJECT NO.	PA ID NO.	DATE	CATEGORY
APPLICANT		COUNTY		

PHOTO	PHOTO
DESCRIPTION	DESCRIPTION

FEMA Form 90-91D, FEB 06

TOWER MONITOR LOG

Date: _____

Applicant Monitor: _____

Monitor: _____

Time	Truck No.	Load Ticket	Capacity	Vol. or Weight	Pick-Up Location	Photo/ Disc	Comments

Tower Site: _____

Page ___

Applicant: _____

Monitor:_____ ROVING MONITOR REPORT Date:_____

Time	Truck No.	Load Ticket	Capacity	Vol. or Weight	Pick-Up Location	Photo/ Disc	Comments

Applicant: _____ Page_____

Monitor:_____ DAILY ISSUE LOG Date:_____

Issue No.	Truck No.	Load Ticket	Pick-Up Location	Contractor/ Sub-Contractor	Applicant Monitor	Photo/ Disc	Issue/Resolution

Applicant:_____ Page_____

TRUCK CERTIFICATION FORM

General Information

Applicant: _____ Monitor: _____

Contractor: _____ Date: _____

Measurement Location: _____ County: _____

Declaration Number: _____

Truck Information

Make	Year	Color	License

Truck Measurements

Performed By: _____ Date: _____

Volume Calculated By: _____ Date: _____

Both Checked by: _____ Date: _____

Driver Information

Name: _____

Address: _____

Phone Number: _____

Owner Information

Name: _____

Address: _____

Phone Number: _____

Truck Identification

Truck Capacity

Photo

(See reverse for calculation worksheet)

TRUCK CERTIFICATION FORM

DUMP TRUCK

Measurements

Truck Measurements — Length (L) = _____ Width (W) ft = _____ Height (H) ft = _____

Hoist Measurement — $Length_H$ (L_1) ft = _____ $Length_H$ (L_2) ft = _____ $WidthH$ (W_H) ft = _____ $HeightH$ (H_H) ft = _____

Radius — Radius ft = _____ Height (H) = _____

Calculations

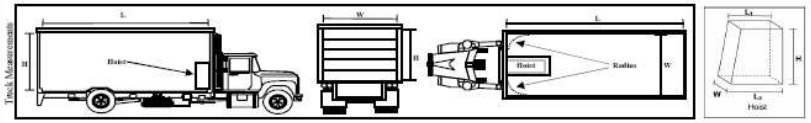
Bed Volume (Basic) — (LxWxH)/27 = + _____ cyd

Hoist Volume — $((L1+L2/2) \times W_H \times H_H)/27$ = - _____ cyd

Radius Volume — $(3.14xR^2xH)/27$ = - _____ cyd

Total = _____ cyd

Cubic Yards



EXTRA TRAILER

Measurements

Truck Measurements (Basic) — Length (L) = _____ Width (W) ft = _____ Height (H) ft = _____

Hoist Measurement — $Length_H$ (L_1) ft = _____ $Length_H$ (L_2) ft = _____ $WidthH$ (W_H) ft = _____ $HeightH$ (H_H) ft = _____

Radius — Radius ft = _____ Height (H) = _____

Calculations

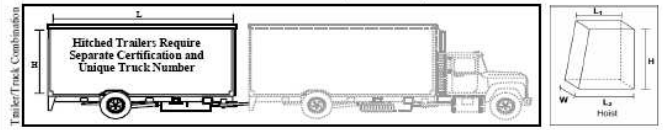
Bed Volume (Basic) — (LxWxH)/27 = + _____ cyd

Hoist Volume — $((L_1+L_2/2) \times W_H \times H_H)$ = - _____ cyd

Radius Volume — $(3.14xR^2xH)/27$ = - _____ cyd

Total = _____ cyd

Cubic Yards



ROUND BOTTOM TRUCK

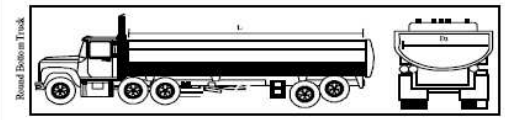
Measurements

Truck Measurements — Length (L) ft = _____ Diameter (D) ft = _____

Calculations

Approx. Volume $(3.14 \times (D/2)^2 \times L)/27$ = _____ cyd (round bottom portion only)

Cubic Yards



LOAD TICKET	Ticket No.: **00001**
Municipality (Applicant):	
Prime Contractor:	
Sub-Contractor:	
TRUCK INFORMATION	
Truck No.:	Capacity (CY):
Truck Driver (print legibly):	

LOADING INFORMATION			
Loading	Time	Date	Inspector / Monitor
Location (address or cross streets):			

GEO-SPATIAL INFORMATION (When using GPS coordinates use decimal degrees – N xx.xxxxx)	
N	**W**

UNLOADING INFORMATION			
Debris Classification		Estimated %, CYs, or Actual Weight	
	Vegetation		
	C & D		
	White Goods		
	HHW		
	Other* (see below)		
Unloading	Time	Date	Inspector / Monitor
DMS (TDSR Site) Name / Location:			

*Other Debris Explanation:	Original: Applicant
	Copy 1:
	Copy 2:
	Copy 3:

DEBRIS MONITORING ISSUES

Debris monitoring will be accomplished using a combination of resources. Debris management operations using local force account labor will be monitored by state agency staff, as assigned by the State Debris Manager and State Disaster Debris Management Team. Local debris management operations using private contractors may be monitored by local force account resources, staff from local nongovernmental organizations, and dedicated monitoring contractors. In Presidentially-declared incidents, federal Debris Monitors will likely be assigned by FEMA to provide supplemental monitoring assistance in support of local and state efforts. Incident circumstances (primarily the nature, scope, magnitude, and anticipated duration of the debris management operation) will determine which resources will be used for debris monitoring functions. The Local Debris Manager and Disaster Debris Management Team will ultimately make this determination, after appropriate consultation with the State Debris Manager and Disaster Debris Management Team. (Note: If force account resources are used exclusively for the debris management operation, debris monitoring requirements will be greatly reduced and will focus primarily on operational and safety issues.)

Debris Monitors will use the following tools and guidance in carrying out their monitoring duties – whether at established facilities or in the field at initial collection locations:

Load Ticket System. A load ticket system tracks debris from the original collection point to a TDSR Site or location of final disposition (Landfill or Resource Recovery Center). By positioning Debris Monitors at each major point of the operation (collection, storage / reduction, and final disposition), the eligible contract scope of work can be properly documented. When using a contract hauler, the Load Ticket verifies hauling activities and is used as the basis for billing.

Load Tickets can be hardcopy (e.g., carbon paper with at least four copies) or computerized. The Load Ticket format found in the Attachment titled "Debris Management Record Keeping" will be used to the extent possible in local and state debris management operations. The following table lists the Load Ticket information requirements and those portions of the ticket that are to be completed by the Debris Monitor:

LOAD TICKET COMPLETION RESPONSIBILITIES

Load Ticket Information	Collection Point Monitor Responsibility	TDSR Site / Final Disposition Monitor Responsibility
Pre-printed ticket number	Not Applicable	Not Applicable
Contract number or municipality (applicant) name	Not Applicable	Not Applicable
Prime contractor's name	X	
Sub-contractor's name	X	
Truck number	X	
Truck driver's name	X	
Truck capacity (in Cubic Yards or Tons)		X
Loading location (GPS and address preferred; also see "Geo-spatial information" below)	X	
Loading date	X	
Loading time(departure from collection location)	X	
Loading site monitor (name / signature)	X	
Geo-spatial information (latitude / longitude in decimal degrees – XX.XXXXX; GPS and address preferred)	X	
Debris classification (e.g., vegetative, C & D, etc.) ; includes "Other Debris Description" box at bottom of ticket	X	
Load size (in Cubic Yards - % or actual – or Tons)		X
TDSR Site or final disposition name / location		X
Unloading date		X
Unloading time (arrival at TDSR Site / final disposition)		X
Unloading site monitor (name / signature)		X

Truck Certification. A truck certification process allows Debris Monitors to readily identify contractor trucks and their hauling capacities in an organized, standardized manner. Truck hauling capacity is vitally important since debris (and specifically vegetative debris) may be hauled and billed by volume. Local Debris Monitors will certify contractor trucks using the FEMA form "Truck Certification Form" found in the Attachment titled "Debris Management Record Keeping" on page 139. Once trucks are certified, they will be re-certified on a random and

periodic basis to ensure contract compliance. The Local Debris Manager / Disaster Debris Management Team will determine how that re-certification process will be implemented based on operational circumstances. Debris Monitors will be responsible for implementing the re-certification process as directed.

Fraud Prevention. The following table highlights some of the ways in which debris contractors can inflate actual quantities of debris removed and processed. Debris Monitors must be aware of and on the lookout for these techniques when conducting their monitoring activities.

POTENTIAL ISSUES OF CONCERN WITH CONTRACTORS

Source: FEMA 325: Debris Management Guide (edited to fit document format)

Problem	Solution
Inappropriate equipment to load debris efficiently.	Contractors must be required to use appropriate equipment to load debris efficiently so that the maximum level of compaction can be achieved to facilitate expeditious removal of debris. Following is a list of truck conditions and eligible capacities: • **HAND-LOADED TRUCKS** do not have factory-built beds or tailgates that allow mechanical equipment to be used to compact vegetative debris. Hand-loaded trailers and trucks will be reduced to **50 percent** of the Debris Monitor's observed capacity percentage because they haul less debris by weight per cubic yard than a mechanically loaded truck. (See explanatory photo on the following page.) • A **TRUCK WITH NO TAILGATE OR NO SOLID TAILGATE** cannot be compacted to its full capacity. These trucks will be recorded at **a maximum of 85 percent** of the truck's certified capacity. (See explanatory photos on the following page.)
Inaccurate truck capacities.	Trucks will be measured before operations and load capacities will be documented by truck number. Periodically, trucks will be re-measured / re-certified to ensure contract compliance.
Trucks not fully loaded.	Debris contractors will sometimes contend that loads are higher in the middle and if leveled would fill the truck. Debris Monitors will not accept this explanation without checking to see if it is valid. (See explanatory photo on the following page.)
Trucks lightly loaded.	Trucks arrive loaded with treetops (or a treetop) with extensive voids in the load. Trucks need to be loaded to their full capacity with front end loaders or other similar equipment.
Trucks overloaded.	Trucks cannot receive credit for more than the measured capacity of the truck or trailer bed even if material is above the sideboards.
Changing truck numbers.	Trucks are listed by assigned vehicle number and capacity. A potential deceptive technique is to change truck or trailer numbers from a smaller carrying capacity vehicle to one with a larger capacity. (For example, a 20-cubic yard truck may use the number for a truck that can carry 30 cubic yards.) Debris Monitors will attempt to minimize this by periodically re-measuring trucks and recording the license plate numbers in addition to a description of the truck.
Reduced truck capacity.	Trucks may have heavy steel grating welded two- to three-feet above the bed after being measured, thus reducing capacity. Debris Monitors will attempt to minimize this by periodically re-measuring the truck bed.
Wet debris when paid by weight.	Contractors may add excessive water to debris loads to increase the weight when being paid by the ton. This can be detected during monitoring if there is excessive water dripping from the truck bed, or by inspecting the truck bed immediately after unloading. Debris Monitors will periodically re-certify the truck's tare weight.
Multiple counting of the same load.	Trucks may drive through the TDSR Site without unloading, then re-enter with the same load. Debris Monitors will attempt to minimize this by observing the time of departure and time of arrival on the Load Ticket, and by ensuring trucks are empty before leaving the TDSR Site.
Picking up ineligible debris.	This deceptive technique is difficult to detect unless Debris Monitors are actually watching the pick-up process. Debris Monitors must fully understand the nature of the eligible debris (especially from private property) and pay attention to time limits imposed on pick-up of specific types of debris.

PHOTOGRAPHIC EXAMPLES OF TRUCK LOAD CONDITIONS

L-R: Hand-loaded truck appears to be 100 percent full, but should be recorded at 50 percent; truck without a solid tailgate should be recorded at a maximum of 85 percent of the truck's certified capacity; truck without a tailgate should be recorded at a maximum of 85 percent of the truck's certified capacity; a 100% loaded truck; a less than 100% loaded truck.

DEBRIS MONITORING (FEMA FACT SHEET 9580.203)

Source: FEMA web site (edited to fit document format)

Overview

When a disaster event occurs that produces large amounts of debris, effective coordination is required between the Public Assistance applicant, State, and FEMA to ensure that debris removal operations are efficient, effective, and eligible for FEMA Public Assistance grant funding. Eligible Public Assistance applicants are encouraged to monitor debris removal operations and document eligible quantities and reasonable expenses to ensure that the work is eligible for Public Assistance grant funding. Failure to do so properly may jeopardize this funding.

Public Assistance applicants can use force account resources or contractors to monitor debris removal operations, or a combination of both. Regardless of the method, the applicant is responsible for ensuring that applicant-managed debris removal work (either force account or contract) being funded through Public Assistance grants is eligible in accordance with Public Assistance guidelines. This Fact Sheet provides Public Assistance applicants with information on how to properly monitor applicant-managed debris removal operations to ensure compliance with these guidelines. It also provides information on debris monitoring responsibilities and duties that apply to both force account and contractor operations; however, some information provided only applies to debris operations performed under contract.

Debris Monitoring Roles and Responsibilities

Monitoring debris removal operations requires comprehensive observation and documentation by the Public Assistance applicant of debris removal work performed from the point of debris collection to final disposal. Monitoring debris removal work involves constant observation of crews to ensure that workers are performing eligible work in accordance with Public Assistance guidelines, and helps to verify compliance with all applicable Federal, State, and local regulations.

A number of different entities play a role in monitoring debris removal operations to ensure that they are efficient, effective and eligible for FEMA Public Assistance funding. It is important that these entities work together to communicate and resolve issues in the field so that reimbursement funding for debris removal operations is not jeopardized. Below is a table which addresses the general monitoring responsibilities and tasks of different partners in the debris removal operation. The table is followed by specific monitoring responsibilities and duties for both force account and contractor debris monitors in the field.

Entity	Responsibilities	Tasks
Debris Removal Contractor	Conduct debris removal operations per the terms of the contract.	• Monitor its own day-to-day operations to ensure its contractual obligations are being met.
Public Assistance Applicant Monitoring Contractor	Works for Applicant to monitor debris contractor's day-to-day operations to ensure the applicants expectations and contractual requirements are being met.	• Provide debris monitoring personnel who are trained in eligibility. • Monitor operations in accordance with the contract requirements. • Provide all monitoring documents as required in the monitoring contract.
Public Assistance Applicant (subgrantee)	Provide oversight and quality assurance of both the debris removal contract and the monitoring contract (if applicable). Request PA funds for eligible work. Ensure performance measures are met and eligible work is documented. Understand eligibility requirements and ensure work performed under the contract meets these requirements.	• Designate project manager. *If debris removal is performed by force account labor:* • Provide documentation to substantiate eligible debris quantities. • Ensure compliance with subgrant requirements. *If debris removal is performed under contract:* • Ensure that debris removal contractors and monitoring contractors (if applicable) understand eligibility requirements for the debris removal operations. • Ensure that only eligible debris quantities are being claimed for Public Assistance. • Resolve issues or discrepancies associated with the contract.

(Table continued on next page.)

(Table continued from previous page.)

Entity	Responsibilities	Tasks
State (Grantee)	Ensure grant requirements outlined in the 44 CFR are being met and that PA applicants are receiving funds for eligible costs. Responsible for monitoring the grant and subgrant to ensure compliance with Federal, State and local laws and regulations.	• Monitor the grant and subgrant requirements. • Ensure that the applicant is sufficiently monitoring the debris removal operation (FEMA/Grantee effort). • Conduct random monitoring at load sites and disposal sites to ensure compliance with grant requirements (FEMA/Grantee effort). • Notify subgrantee of compliance issues and outline corrective actions (FEMA/Grantee effort).
FEMA	Ensure grant requirements outlined in 44 CFR are being met. Fund eligible work. Responsible for the preparation of large project worksheets, development of the scope of work and the obligation of funds. Responsible for monitoring the grant to ensure compliance with Federal, State and local laws and regulations.	• Develop large project worksheets in coordination with the Grantee and subgrantee. • Utilize monitors to ensure that the applicant is sufficiently monitoring the debris removal operation. (FEMA/Grantee effort) • Conduct random monitoring at load sites and disposal sites to ensure compliance with grant requirements. (FEMA/Grantee effort). • Notify Grantee/subgrantee of compliance issues and outline corrective actions (FEMA/Grantee effort). • Increase or decrease monitoring efforts as necessary to ensure corrective actions are in place and operations are being effectively monitored.

The specific responsibilities and duties of individual debris monitors in the field are the same for both force account and contracted debris monitoring operations. They are:

- Report issues to their direct supervisor which require action (such as safety concerns, contractor non-compliance and equipment use)
- Accurately measure and certify truck capacities (recertify on a regular basis)
- Properly and accurately complete and physically control load tickets (in tower and field)
- Ensure that trucks are accurately credited for their load
- Ensure that trucks are not artificially loaded (ex: debris is wetted, debris is fluffed-not compacted)
- Validate hazardous trees, including hangers, leaners, and stumps
- Ensure that hazardous wastes are not mixed in loads
- Ensure that all debris is removed from trucks at Debris Management Sites (DMS)
- Report if improper equipment is mobilized and used
- Report if contractor personnel safety standards are not followed
- Report if general public safety standards are not followed
- Report if completion schedules are not on target
- Ensure that only debris specified in the contract is collected (and is identified as eligible or ineligible)
- Assure that force account labor and/or debris contractor work is within the assigned scope of work
- Monitor site development and restoration of DMSs
- Report to supervisor if debris removal work does not comply with all local ordinances as well as State and Federal regulations (i.e., proper disposal of hazardous wastes)
- Record the types of equipment used (time and material contract)
- Record the hours equipment was used, include downtime of each piece of equipment by day (time and material contract)

Applicants may request FEMA/State assistance with debris monitoring or monitor training.

Only FEMA has the authority to make eligibility decisions; contractors cannot make eligibility determinations. Information on eligibility can be found in the Public Assistance Debris Management Guide FEMA 325, the Public

Assistance Policy Digest FEMA 321, the Public Assistance Applicant Handbook FEMA 323, and the Public Assistance Guide FEMA 322.

Monitoring Requirements by Type of Contract

Unlike other categories of work eligible for Public Assistance grants, initial debris removal project worksheets typically do not have a defined scope of work, since precise quantities of debris are difficult to attain. Therefore, unit price contracts which pay by debris volume or weight removed are typically implemented. Unit price contracts require extensive monitoring to determine accurate quantities of eligible debris removed and disposed. As load tickets are compiled and accurate quantities are determined through monitoring, the scope of work for the project worksheet, or version, is established.

In some cases, time and material contracts may be more cost effective and appropriate for the amount and type of eligible work to be performed. For both time and materials and lump sum contracts, debris monitors must still document and quantify eligible debris amounts in order to determine reasonableness of costs.

The table below includes a breakdown of monitoring requirements by contract type.

Type of Contract	Project Worksheet Scope of Work	Subgrantee Monitoring Required:					Comments
		Crew Efficiency	Load Site	DMSs	Disposal Sites	Fraud	
Lump Sum	Defined debris quantities and reasonable costs. Estimate is basis for contract costs.		X		X		Quantities are still required to determine reasonable costs.
Unit Price - CYs	Based on eligible debris listed on load tickets.	X	X	X	X	X	
Unit Price - Ton	Based on actual weight measurements of eligible debris listed on load tickets.		X		X	X	
Time and Material	Based on labor, equipment and materials records. Reasonable costs evaluated by determining costs per unit.	X	X		X	X	Typically used for road clearance. If used for debris removal, quantities are still required to determine reasonable costs. Eligible costs are restricted to up to 70 hours.

Monitoring Contracts

The request for proposal (RFP) for debris monitoring contracts should outline the qualification of debris monitors. The qualifications should be appropriate for the individual responsibilities and duties listed above, and debris monitors should have experience working on construction sites and be familiar with safety regulations. It is not necessary to have professional engineers and other certified professionals perform these duties. Debris monitors primarily should have the ability to estimate debris quantities, differentiate between debris types, properly fill out load tickets, and follow all site safety procedures.

The RFP should also outline possible locations to be monitored and reporting requirements to document eligible debris quantities.

Monitoring contracts are typically time and material and must contain a ***not-to-exceed*** clause per the requirements of Part 13 of 44 CFR. The subgrantee should ensure the level of monitoring and overhead claimed is commensurate with the level of effort required to effectively monitor the debris removal and monitoring operation. In addition to the costs for the monitors, the subgrantee can claim as part of its monitoring project worksheet reasonable costs for the debris monitoring contractor to provide training, oversight, and data compilation as required by the terms of the contract. Architectural and engineering service overhead should not be claimed.

Additional information on costs that are eligible can be found in the *Public Assistance Debris Management Guide FEMA 325.*

The monitoring contractor costs associated with compiling data to verify costs invoiced by the debris removal contractor can be an eligible expense. Costs associated with attending meetings with FEMA and/or the Grantee and compiling documentation for the production of project worksheets are funded through the administrative allowance as stated in 44 CFR, Part 206.228 and cannot be a direct charge to a Public Assistance grant.

Reporting Requirements & Performance Measures

If FEMA is providing grant assistance for the applicant's monitoring contract, a sample of the reporting requirements outlined in the contract will be required to substantiate the eligible costs. This sample must be adequate to demonstrate that sufficient measures were taken to ensure eligibility and accurate quantities are being reported as part of the grant. Applicants should require debris monitors to submit daily reports on load quantities, debris management site operations, and operational and safety issues in the field. Regular reporting helps to promote quality assurance and provides the applicant with a consistent accounting of operations in the field.

If a time and material monitoring contract is used, the contractor will have to supply labor, equipment and material records to the subgrantee in order to substantiate the actual costs in the project worksheet.

Continuous monitoring of all activities of a debris contractor can help promote efficiency and effectiveness in the debris removal operation. In evaluating a contractor's performance, primary interest is in the progress toward completion of the services called for and the financial status of the contract. It is important that the contract provide for submission of reports and payment estimates to aid in evaluating the contractor's progress.

Applicant debris monitoring responsibilities may include tracking performance measures used to assess the progress of debris removal operations in the field. Specific debris contract performance measures may include:

- Percentage completion tracking
- Adherence to contract time schedules
- Adherence to contract cost schedules

Contract Procurement Requirements

To be eligible for reimbursement under the Public Assistance Program, contracts for debris monitoring must meet rules for Federal grants, as provided for in 44 CFR Part 13.36 Procurement (http://www.access.gpo.gov/nara/cfr/waisidx_06/44cfr13_06.html). Public Assistance applicants should comply with their own procurement procedures in accordance with applicable State and local laws and regulations, provided that they conform to applicable Federal laws and standards identified in Part 13.

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DEBRIS REMOVAL FROM PRIVATE PROPERTY SPECIAL CONSIDERATIONS

Demolition of Structures. Private property debris removal and/or demolition will only be done in those extreme cases where there are clear and present threats to public health and safety, or the economic recovery of the affected local jurisdiction is at risk. Procedures have been developed for this type of work in the event this becomes necessary. These procedures include: 1) criteria for implementing removal and demolition operations on private property; 2) documentation requirements; and 3) a demolition inspection process.

(Note: FEMA Recovery Policies 9523.4, "Demolition of Private Structures," and 9523.13, "Debris Removal from Private Property," provide guidance on FEMA eligibility criteria and requirements for private property debris removal and/or demolition under the PAGP. These policies will be followed to the extent possible when conducting these types of operations.)

Private Property Condemnation Criteria and Procedures. If the affected local jurisdiction decides it may be necessary to demolish damaged private structures, normal private property condemnation procedures for that jurisdiction will be implemented. The local building safety official will contact the affected property owner and assess and determine the building's structural integrity. If this assessment determines that the building represents a hazard to the health and safety of the public or poses a threat to public rights-of-way, the building will be condemned and formal condemnation proceedings will be initiated.

Documentation Requirements for Private Property Condemnation and Demolition. The following documentation will be maintained (as appropriate) for private property condemnation and demolition operations:

DOCUMENTATION REQUIREMENTS FOR PRIVATE PROPERTY CONDEMNATION AND DEMOLITION

Documentation	Purpose	Responsible Local Official
Verification of Ownership	Ensures the proper site and owner are identified and the owner is aware of the nature of the scheduled building assessment.	
Right-of-Entry Permit / Hold Harmless Agreement	Once signed by the property owner, this allows local officials to enter the property to complete the building assessment. The hold harmless agreement documents the property owner's promise that he/she will not bring legal action against the jurisdiction if there is damage or harm done to the property.	
Building Assessment	Documents damage to the structure and describes the threat(s) to public health and safety. Generally contains the building official's determination as to whether the structure should be condemned and whether it should be repaired or demolished. This may be an official structural assessment.	
Verification of Insurance	Allows the jurisdiction to pursue financial compensation if the property owner's insurance policy covers demolition and debris removal.	
Archaeological Review	Outlines the archaeological low-impact stipulations for demolition and debris removal activities and highlights implications if guidelines are not properly complied with.	
Environmental Review	Ensures that adverse impacts to protected environmental resources are minimized or avoided when removing debris from the proposed site. Reviews must be acceptable to the appropriate resource agency. Wetlands and other water resources, hazardous materials, and endangered species habitats are of particular concern.	
State Historic Preservation Office (SHPO) Review	Confirms that the SHPO has been notified and correspondence has been received absolving the area of any historic significance.	
Photographs	Show the disaster-damaged condition of the property prior to the beginning of demolition work. Generally consists of one or more labeled photographs that confirm the address and identified scope of work on the property.	
Letter / Notice of Condemnation	A document signed by the building official that outlines the specific threat to public health and safety.	
Notice of Demolition	Issued to inform the property owner when demolition will begin. Notices must be posted so as to provide a reasonable period of time for personal property to be removed. The property owner should be notified, if not already contacted, through direct mail and local media.	
Notice of Intent to Demolish	Issued to provide for the public health and safety of the neighboring residents. The notice must be conspicuously posted on the structure to be demolished.	

Private Property Demolition Inspection Process. The local building safety official will conduct inspections of demolition sites prior to, the day of and/or during, and upon completion of the demolition operations. Photographs will be taken at each site inspection for documentation purposes. Inspections will generally include the following:

- Utilities Inspection: water and sewer service (or septic tank), gas service, electrical service, telecommunications service, and other systems as appropriate will be inspected to verify the utilities have been terminated and isolated from the proposed work area during demolition operations.

- Occupancy Inspection: the structure will be inspected immediately prior to demolition to ensure that no one is physically in the building.

- Open Void Inspection: if the structure has a basement that is to be filled, an inspection will be conducted once the above-grade structure is gone and the inspector can visually see the entire below-grade excavation.

- Post-Demolition Inspection: the site will be inspected once the structure is demolished, the debris is removed, and the site graded.

The Private Property Demolition Checklist on the following page will be used to document the inspection process.

Mobile Home Park Procedures. High density development situations, such as mobile home parks, can create a considerable amount of mixed debris in a relatively small area. Although the same debris removal and/or demolition procedures will be used in mobile home parks as are used in lower density development situations (i.e., single family homes or businesses on individual sites), it is expected that mobile home parks will present more intense requirements in all phases of the operation. Therefore, additional staff from the affected local jurisdiction (force account, contracted, and/or volunteer) will be deployed to work on debris removal and/or demolition activities in damaged mobile home parks and other high density development areas.

Particular attention will be directed to documenting legal responsibility within the parks. A mobile home park site may be owned, operated, and maintained by one or more parties. The individual homes may be owned by one of those same parties or by the individuals that occupy the structures. Debris removal and/or demolition activities within the park will be coordinated with the owner(s) so that recovery can be expedited to the extent possible.

Navigation Hazard Removal. Damage to publicly-owned / operated marinas and/or navigable waterways caused by a major disaster can result in abandoned sunken boats and other debris that may impede navigation. If that occurs, the Local Debris Manager and Disaster Debris Management Team will coordinate as appropriate with the United States Coast Guard (USCG), the USACE, the MDNR, the MSP/EMHSD, and other agencies as required to ensure that navigation hazards are removed safely and efficiently. The two main challenges with navigation hazards are locating the debris and finding legal owners of sunken boats. In many of these operations, supplemental state, federal, or private sector assets such as helicopters, boats, and sonar and/or dive teams to aid in locating submerged vessels and other debris are often required. Requests from local jurisdictions for supplemental resources will be addressed by the MSP/EMHSD through the SEOC. As appropriate, a flotation marker will be placed at the site of the submerged vessel / debris once it is located in order to keep positions documented. A GPS coordinate may also be taken. The legal owners of vessels may be identified by using the vessel's registration number and/or marina records.

Removal of the navigation hazards may be done by the affected local jurisdiction using a marine salvage contractor, by the USCG and/or USACE under mission assignment by FEMA, or a combination of these methods. Refer to the Attachment titled "Sample Debris Management Contracts" for a sample scope of work for sunken vessel removal operations developed by the USACE. This sample contract will be followed to the extent possible by affected local jurisdictions if they become involved in a navigation hazard removal operation as the contracting party.

PRIVATE PROPERTY DEMOLITION CHECKLIST

Property Address:_____

	PRE-DEMOLITION			
Action Number	**Action**	**Initial**	**Date**	**Notes / Comments**
1	Establish property management file for each parcel of private property.			
2	Provide notice of condemnation.			
3	Complete environmental and historic preservation reviews.			
4	Obtain right of entry and hold harmless agreements.			
5	Verify property description and ownership (i.e., tax assessment, legal description).			
6	Document property owner's insurance coverage for future recovery.			
7	Notify lien holder(s) of intent to demolish as needed.			
8	Conduct building inspection as needed.			
9	Conduct public health inspection as needed.			
10	Conduct fire inspection as needed.			
11	Provide public notification of condemnation / demolition.			
12	Verify personal property removal.			
	(insert additional jurisdiction-specific actions as appropriate)			
	DEMOLITION			
13	Verify structure is unoccupied.			
14	Cap well, water, sewer, and septic lines. Disconnect electrical, gas, telecommunications and other utility services. Remove propane tanks.			
15	Mark easements and underground utilities.			
16	Identify / remove / dispose of asbestos, lead-based paint and other hazardous materials per MDEQ / EPA requirements.			
17	Identify / remove / dispose of all HHW per MDEQ / EPA requirements.			
18	Record GPS coordinates. Photograph site before and after demolition.			
19	Document actual demolition and removal of debris.			
	(insert additional jurisdiction-specific actions as appropriate)			

Complete documentation is compiled within the project file for each individual structure / property.

I, the **(insert exact title of building safety official)** for the **(name of jurisdiction)**, certify that all processes and documentation referred to in this checklist are complete (except Item 19) prior to the demolition of the referenced structure.

_____

Name (print) Title Signature Date

DEMOLITION OF PRIVATE STRUCTURES
(FEMA DISASTER ASSISTANCE POLICY 9523.4 – JULY 18, 2007)

Source: FEMA web site (edited to fit document format)

TITLE: Demolition of Private Structures

DATE: July 18, 2007

PURPOSE: This policy provides guidance in determining the eligibility of demolition of private structures under the Federal Emergency Management Agency's (FEMA) Public Assistance Program.

SCOPE AND AUDIENCE: The policy is applicable to all major disasters declared on or after the date of publication of this policy. It is intended for FEMA personnel involved in the administration of the Public Assistance Program.

AUTHORITY: Section 403(a)(3)(E) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5170b, 42 U.S.C. 5172, 44 CFR 206.225, and 44 CFR 206.226.

BACKGROUND:

A. Section 403 of the Stafford Act, 42 U.S.C. 5170b, provides FEMA authority to provide assistance essential to meeting immediate threats to life and property resulting from a major disaster. Specifically, Section 403(a)(3)(E) provides FEMA authority to fund the demolition of unsafe structures which endanger the public on public and private property (44 CFR 206.225). Eligible Public Assistance applicants may be eligible for Public Assistance grant funding under Section 403 of the Stafford Act under the conditions of this policy.

B. The demolition of unsafe structures owned by eligible public and private nonprofit (PNP) applicants may be eligible for Public Assistance grant funding under Section 406 of the Stafford Act, which funds the repair, restoration, reconstruction, or replacement of eligible facilities (44 CFR 206.226).

POLICY:

A. Definitions.

1. Demolition: The act or process of reducing a structure, as defined by State or local code, to a collapsed state.
2. Demolition debris: Materials including building materials and personal effects that are deposited as a result of the demolition process.
3. Legal responsibility: A statute, formally adopted local code, or ordinance that gives local government officials the responsibility to enter private property to demolish unsafe structures or to perform work to remove an immediate threat (44 CFR 206.223(a)(3), 44 CFR 206.221(c), and 44 CFR 206.225(a)(3)).
4. Unsafe structure: A structure found to be dangerous to the life, health or safety of the public because such structure is so damaged or structurally unsafe as a direct result of the declared disaster that partial or complete collapse is imminent.

B. Duplication of Benefits (44 CFR 206.191). FEMA is prohibited by Section 312 of the Stafford Act from approving funds for work that is covered by any other source of funding. Therefore, State and local governments must take reasonable steps to prevent such an occurrence, and verify that insurance coverage or any other source of funding does not exist for the demolition of private structures.

1. When demolition of private structures is covered by an insurance policy, the insurance proceeds must be used as the first source of funding. Public Assistance grant funding may be used to pay for the remainder of the demolition costs.

2. If it is discovered that a duplication of benefits from any other source of funding has occurred, FEMA will de-obligate funds from the Grantee in the amount that such assistance duplicates funding the property owners received from other sources.

C. Eligibility of Demolition of Private Structures.

1. Demolition of privately owned structures and subsequent removal of demolition debris may be eligible for Public Assistance grant funding under Section 403 of the Stafford Act when the following conditions are met:

   a. The structures were damaged and made unsafe by the declared disaster, and are located in the area of the declared disaster (44 CFR 206.223(a)(1) and (2)).

   b. The State or local government applicant certifies that the structures are determined to be unsafe and pose an immediate threat to the public (44 CFR 206.225(a)). The Public Assistance applicant provides a detailed explanation documenting its legal responsibility to enter private property to demolish an unsafe structure, and confirms that all legal processes and permission requirements (e.g., rights-of-entry) for such action have been satisfied. The Public Assistance Group Supervisor must concur that the demolition of unsafe structures and removal of demolition debris are in the public interest. FEMA will consider alternative measures to eliminate threats to life, public health, and safety posed by disaster-damaged unsafe structures, including fencing off unsafe structures and restricting public access, when evaluating requests for demolition.

      i. The eligible applicant must demonstrate the legal basis as established by law, ordinance, or code upon which it exercised or intends to exercise its responsibility following a major disaster to demolish unsafe private structures (44 CFR 206.223(a)(3)). Codes and ordinances must be germane to the structural condition representing an immediate threat to life, public health, and safety, and not merely define the local government's uniform level of services.

         States and local governments ordinarily rely on condemnation and/or nuisance abatement authorities to obtain legal responsibility prior to the commencement of demolition of private structures. There may be circumstances, however, where the State or local government determines that ordinary condemnation and/or nuisance abatement procedures are too time-consuming to address an immediate public health and safety threat. In such circumstances, applicants may not have to precisely follow their nuisance abatement procedures or other ordinances that would prevent the State or local government from taking emergency protective measures to protect public health and safety (44 CFR 206.225(a)).

      ii. The applicant's legal responsibility to take action where there is an immediate threat to life, public health, and safety should be independent of any expectation, or request, that FEMA will reimburse costs incurred for demolition of private structures and the removal of demolition debris from private property. In addition, an applicant's legal responsibility is not established solely by an applicant obtaining signed rights-of-entry and hold harmless agreements from property owners.

   c. The State or local government confirms that a legally authorized official has ordered the exercise of public emergency powers or other appropriate authority to enter onto private property in order to remove/reduce threats to life, public health, and safety threat via demolition of unsafe structures and removal of demolition debris (44 CFR 206.223).

   d. The State or local government indemnifies the Federal government and its employees, agents, and contractors from any claims arising from the demolition of unsafe private structures and removal of demolition debris from private property (44 CFR 206.9).

   e. The work is completed within the completion deadlines outlined in 44 CFR 206.204 for emergency work.

2. Eligible costs associated with the demolition of private structures may include, but are not limited to:

   a. capping wells;
   b. pumping and capping septic tanks;
   c. filling in basements and swimming pools;
   d. testing and removing hazardous materials from unsafe structures, including asbestos and household hazardous wastes;

e. securing utilities (electric, phone, water, sewer, etc.);
f. securing permits, licenses, and title searches. Fees for permits, licenses, and titles issued directly by the applicant are not eligible unless it can be demonstrated that the fees are above and beyond administrative costs; and
g. demolition of disaster-damaged outbuildings such as garages, sheds, and workshops determined to be unsafe.

3. Ineligible costs associated with the demolition of private structures may include:

   a. removal of slabs or foundations, except in very unusual circumstances, such as when disaster-related erosion under slabs on a hillside causes an immediate public health and safety threat;
   b. removal of pads and driveways;

4. Structures condemned as safety hazards before the disaster are not eligible for demolition and subsequent demolition debris removal under Public Assistance grant authority.

5. Individuals and private organizations (except for eligible PNPs) will not be reimbursed for demolition activities on their own properties under the Public Assistance Program (44 CFR 206.224(c)).

6. The removal of substantially damaged structures and associated appurtenances acquired through a Section 404 FEMA Hazard Mitigation Grant Program buyout and relocation project may be eligible for Public Assistance grant funding under Section 407 of the Stafford Act. Such removal must be completed within two years of the declaration date, unless extended by the Assistant Administrator of the Disaster Assistance Directorate (44 CFR 206.224(a)(4)).

D. Demolition of Commercial Structures. The demolition of commercial structures is generally ineligible for Public Assistance grant funding. It is assumed and expected that these commercial enterprises retain insurance that can and will cover the cost of demolition. However, in some cases as determined by the FCO, the demolition of commercial structures by a State or local government may be eligible for FEMA reimbursement only when such removal is in the public interest (44 CFR 206.224(a) and (b)).

Apartments, condominiums, and mobile homes in commercial trailer parks are generally considered commercial structures with respect to Public Assistance funding.

E. Environmental and Historic Review Requirements. Eligible demolition activities must satisfy environmental and historic preservation compliance review requirements as established by 44 CFR Parts 9 and 10, the National Historic Preservation Act, the Endangered Species Act, and all other applicable legal requirements.

ORIGINATING OFFICE: Disaster Assistance Directorate (Public Assistance Division).

SUPERSESSION: This policy supersedes Recovery Policy 9523.4 dated November 9, 1999, and all previous guidance on this subject.

REVIEW DATE: Three years from date of publication.

//signed//
Carlos J. Castillo
Assistant Administrator
Disaster Assistance Directorate

DEBRIS REMOVAL FROM PRIVATE PROPERTY
(FEMA DISASTER ASSISTANCE POLICY 9523.13 – JULY 18, 2007)

Source: FEMA web site (edited to fit document format)

TITLE: Debris Removal from Private Property

DATE: July 18, 2007

PURPOSE: This policy describes the criteria that the Federal Emergency Management Agency (FEMA) will use to evaluate the eligibility of debris removal work from private property under the Public Assistance Program.

SCOPE AND AUDIENCE: The policy is applicable to all major disasters and emergencies declared on or after the date of publication of this policy. It is intended for FEMA personnel involved in the administration of the Public Assistance Program.

AUTHORITY: Sections 403(a)(3)(A), 407, and 502 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5170b, 42 U.S.C. 5173, 42 U.S.C. 5192, and 44 CFR 206.224.

BACKGROUND:

A. Actions 403(a)(3)(A) and 407 of the Stafford Act, 42 U.S.C. 5170b and 5173, respectively, provide FEMA authority to fund debris removal from private property provided that the State or local government arranges an unconditional authorization for removal of the debris, and agrees to indemnify the Federal government against any claim arising from the removal.

B. The regulations implementing Sections 403 and 407 of the Stafford Act at 44 CFR 206.224 establish the requirement that debris removal be in the “public interest" in order to be eligible for reimbursement. “Public interest" is defined as being necessary to:
   1. eliminate immediate threats to life, public health, and safety; or
   2. eliminate immediate threats of significant damage to improved public or private property; or
   3. ensure economic recovery of the affected community to the benefit of the community-at-large.

C. Generally, debris removal from private property following a disaster is the responsibility of the property owner. However, large-scale disasters may deposit enormous quantities of debris on private property over a large area resulting in widespread immediate threats to the public-at-large. In these cases, the State or local government may need to enter private property to remove debris to: eliminate immediate threats to life, public health, and safety; eliminate immediate threats of significant damage to improved property; or ensure economic recovery of the affected community to the benefit of the community-at-large. In these situations, debris removal from private property may be considered to be in the public interest and thus may be eligible for reimbursement under the Public Assistance Program (44 CFR 206.224).

POLICY:

A. Definitions.

1. Disaster-generated debris: Any material, including trees, branches, personal property and building material on public or private property that is directly deposited by the disaster.

2. Improved property: Any structure, facility, or equipment that was built, constructed, or manufactured. Examples include houses, sheds, car ports, pools, and gazebos. Land used for agricultural purposes is not improved property (44 CFR 206.221(d)).

3. Legal responsibility: A statute, formally adopted State or local code, or ordinance that gives local government officials responsibility to enter private property to remove debris or to perform work to remove an immediate threat (44 CFR 206.223(a)(3), 44 CFR 206.221(c), and 44 CFR 206.225(a)(3)).

4. Private property: Land and structures, to include contents within the structures, built on land that is owned by non-governmental entities (44 CFR 206.224(b)).

5. Private road: Any non-public road for which a subdivision of the State is not legally responsible to maintain. Private roads include roads owned and maintained by homeowners associations, including gated communities,

and roads for which no entity has claimed responsibility. Local police, fire, and emergency medical entities may use these roads to provide services to the community (44 CFR 206.224(b)).

B. Approval for FEMA Assistance. FEMA will work with states affected by a disaster to designate those areas where the debris is so widespread that removal of the debris from private property is in the "public interest" pursuant to 44 CFR 206.224, and thus is eligible for FEMA Public Assistance reimbursement on a case-by-case basis.

1. Any State or local government that intends to seek reimbursement to remove debris from private property within a designated area will, prior to commencement of work, submit a written request for reimbursement to, and receive approval from, the Federal Coordinating Officer (FCO). The written request will include the following information:

   a. Public Interest Determination (44 CFR 206.224(a)):

      i. Immediate Threat to Life, Public Health, and Safety Determination. The basis of a determination by the State, county or municipal government's public health authority or other public entity that has legal authority to make such a determination that disaster-generated debris on private property in the designated area constitutes an immediate threat to life, public health, and safety; or

      ii. Immediate Threat to Improved Property Determination. The basis of the determination by the State, county, or municipal government that the removal of disaster-generated debris is cost effective. The cost to remove the debris should be less than the cost of potential damage to the improved property in order for the debris removal to be eligible; or

      iii. Ensure Economic Recovery of the Affected Community to the Benefit of the Community at Large Determination. The basis of the determination by the State, county, or municipal government that the removal of debris from commercial properties will expedite economic recovery of the community-at-large. Generally, commercial enterprises are not eligible for debris removal.

   b. Documentation of Legal Responsibility (44 CFR 206.223(a)(3)).

      A detailed explanation documenting the requesting State or local government's authority and legal responsibility at the time of disaster to enter private property to remove debris, and confirmation that all legal processes and permission requirements (e.g., right-of-entry) for such action have been satisfied.

      i. The eligible applicant requesting assistance must demonstrate the legal basis as established by law, ordinance, or code upon which it exercised or intends to exercise its responsibility following a major disaster to remove disaster-related debris from private property. Codes and ordinances must be germane to the condition representing an immediate threat to life, public health, and safety, and not merely define the applicant's uniform level of services. Typically, solid waste disposal ordinances are considered part of an applicant's uniform level of services.

         States and local governments ordinarily rely on condemnation and/or nuisance abatement authorities to obtain legal responsibility prior to the commencement of debris removal work. There may be circumstances, however, where the State or local government determines that ordinary condemnation and/or nuisance abatement procedures are too time-consuming to address an immediate public health and safety threat. In such circumstances, applicants do not have to precisely follow their nuisance abatement procedures or other ordinances that would prevent the State or local government from taking emergency protective measures to protect public health and safety (44 CFR 206.225(a)).

      ii. The applicant's legal responsibility to take action where there is an immediate threat to life, public health, and safety must be independent of any expectation, or request, that FEMA will reimburse costs incurred for private property debris removal. In addition, legal responsibility is not established solely by an applicant obtaining signed rights-of-entry and hold harmless agreements from property owners.

   c. Authorization for Debris Removal from Private Property (44 CFR 206.223(a)(3)). Confirmation that a legally-authorized official of the requesting applicant has ordered the exercise of public emergency powers or other appropriate authority to enter onto private property in the designated area in order to remove/reduce threats to life, public health, and safety threat via debris removal.

   d. Indemnification (44 CFR 206.9). The requesting entity indemnifies the Federal government and its employees, agents, and contractors from any claims arising from the removal of debris from private property.

2. The FCO will approve or disapprove in writing each written request submitted by the State or local government for FEMA to designate areas eligible for private property debris removal. After receiving approval from the FCO, the State or local government may begin identifying properties and the specific scope of work for private property debris removal activities and apply for supplemental assistance through the Public Assistance Program.

C. Duplication of Benefits (44 CFR 206.191). FEMA is prohibited by Section 312 of the Stafford Act from approving funds for work that is covered by any other source of funding. Therefore, State and local governments must take reasonable steps to prevent such an occurrence, and verify that insurance coverage or any other source of funding does not exist for the debris removal work accomplished on each piece of private property.

1. When debris removal from private property is covered by an insurance policy, the insurance proceeds must be used as the first source of funding. Public Assistance grant funding may be used to pay for the remainder of the costs of debris removal from private property.

2. If FEMA discovers that a duplication of benefits from any other source of funding has occurred, FEMA will de-obligate funds from the Grantee in the amount that such assistance duplicates funding that the property owners received from other sources.

D. Eligibility of Debris Removal Work from Private Property (44 CFR 206.224(b)).

1. Eligible debris removal work from private property includes removal of:
   a. Large piles of disaster-generated debris in the living, recreational, and working areas of properties in urban, suburban, and rural areas, including large lots.

   b. Disaster-generated debris obstructing primary ingress and egress routes to improved property.

   c. Disaster-damaged limbs and leaning trees in danger of falling on improved property, primary ingress or egress routes, or public rights-of-way.

      i. Hazardous tree removal is eligible only if the tree is greater than six inches in diameter (measured at diameter breast height) and meets any of the following criterion: more than 50% of the crown is damaged or destroyed; the trunk is split or broken branches expose the heartwood; or the tree is leaning at an angle greater than 30 degrees and shows evidence of ground disturbance.

      ii. Hazardous limb removal is eligible only if the limb is greater than two inches in diameter measured at the point of break.

   d. Debris created by the removal of disaster-damaged interior and exterior materials from improved property.

   e. Household hazardous wastes (such as household cleaning supplies, insecticides, herbicides, etc.)

   f. Disaster-generated debris on private roads, including debris originating from private property and placed at the curb of public or private rights-of-way, provided that the removal of the debris is the legal responsibility of an eligible applicant, on the basis of removing an immediate threat to life, public health, and safety.

2. Ineligible debris removal work on private property includes the removal of:

   a. Debris from vacant lots, forests, heavily wooded areas, unimproved property, and unused areas.
   b. Debris on agricultural lands used for crops or livestock.
   c. Concrete slabs or foundations-on-grade.
   d. Reconstruction debris consisting of materials used in the reconstruction of disaster-damaged improved property.

E. Debris Removal from Commercial Property. The removal of debris from commercial property is generally ineligible for Public Assistance grant funding. It is assumed and expected that these commercial enterprises retain insurance that can and will cover the cost of debris removal. However, in some cases as determined by the FCO, the removal of debris from private commercial property by a State or local government may be eligible for FEMA reimbursement only when such removal is in the public interest (44 CFR 206.224(a) and (b)).

Industrial parks, golf courses, commercial cemeteries, apartments, condominiums, and mobile homes in commercial trailer parks are generally considered commercial property with respect to Public Assistance funding.

F. Environmental and Historic Review Requirements. Eligible debris removal activities on private property must satisfy environmental and historic preservation compliance review requirements as established by 44 CFR Parts 9 and 10, the National Historic Preservation Act, the Endangered Species Act, and all other applicable legal requirements.

ORIGINATING OFFICE: Disaster Assistance Directorate (Public Assistance Division)

SUPERSESSION: This policy supersedes Recovery Policies 9523.13 and 9523.14, dated October 23, 2005, and all previous guidance on this subject.

REVIEW DATE: Three years from date of publication.

//signed//
Carlos J. Castillo
Assistant Administrator
Disaster Assistance Directorate

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DISPOSAL OF DISASTER DEBRIS

In accordance with Michigan law and regulation, as well as the provisions set forth in the Michigan Emergency Management Plan, disposal of disaster debris must be addressed in partnership with the Michigan Department of Environmental Quality (MDEQ). The MDEQ, as the environmental stewardship agency for the State of Michigan, has ultimate jurisdiction over the handling, treatment and disposal of all waste – including solid waste and hazardous waste. Disaster debris typically contains both types of waste so it is imperative that the State and Local Debris Managers begin a dialogue with the MDEQ at the start of the debris management effort to avoid problems down the line. The following information should be considered when planning for the disposal of disaster debris:

REGULATORY STATUTES FOR SOLID AND HAZARDOUS WASTE

Natural Resources and Environmental Protection Act, 1994 PA 451, as amended:

Part 55 – Air Pollution Control (for burning operations);
Part 111 – Hazardous Wastes;
Part 115 – Solid Wastes;
Part 169 – Scrap Tires;
Part 515 – Forest Fire Prevention (for burning operations);
Other Parts may also apply – depending on the nature of the debris.

WHAT TO DO WITH HAZARDOUS WASTE

- Determine if it is hazardous based on known information or testing. If yes, use a licensed hazardous waste hauler and dispose of it at a licensed hazardous waste treatment, storage or disposal facility.

- Questions should be directed to the MDEQ Waste and Hazardous Materials Division (MDEQ/WHMD) in Lansing (517/335-2690) or to the MDEQ/WMHD hazardous waste characterization staff at the appropriate MDEQ District Office. (Refer to the MDEQ/WHMD web page for a list and map of the District Offices with current staff contact information. From the MDEQ home page, click on “Waste and Hazardous Materials Division” and then look under the “Useful WHMD Links” for a list and map of District Offices, as well as a current staff directory.)

- Household hazardous waste is solid waste and generally can be disposed with solid waste in landfills.

WHAT TO DO WITH SOLID WASTE

- Must be disposed of at a licensed solid waste disposal area.

- Must comply with county solid waste management plans (what county can the waste go to).

- The MDEQ/WHMD has a list of licensed disposal areas on its web page (click on the “Solid Waste” icon). This information is also contained in the county solid waste management plan, and in the local telephone directory (yellow pages). The county solid waste coordinator, recycling coordinator, Department of Public Works, or other related office (varies by county) may also be able to help.

- Part 115 does not allow the development of temporary, unlicensed storage or processing areas (TDSR Sites) without a permit UNLESS emergency disposal approval has been granted by the MDEQ/WHMD:

  R 299.4112 Emergency disposal; conditions for approval.

  Rule 112. (1) If a material poses a threat or substantial nuisance to the public or the environment, a person may petition the director to approve the emergency disposal of the material as follows: (Refer to the section on page 121 titled “Disaster Debris Management of Wastes: Part 115, Solid Waste Management” for a complete description of the Rule 112 provisions.)

  For waste disposal issues, this authority has been delegated by the MDEQ Director to the MDEQ/WHMD Chief.

  To obtain MDEQ emergency disposal approval:

For **larger scale emergencies / disasters** (probably resulting in a Governor's declaration under 1976 PA 390, as amended) which the MSP/EMHSD is coordinating, the MSP/EMHSD will contact the MDEQ Emergency Management Coordinator, who in turn will coordinate the request to the MDEQ/WHMD Chief.

For **smaller, undeclared emergencies,** requests should be made through the appropriate MDEQ/WHMD District, which will coordinate the request to the MDEQ/WHMD Chief.

If emergency waste disposal authority is granted, the MDEQ/WHMD will specify: 1) a limited time frame; 2) approved locations for activities; 3) approved materials; 4) approved handling / reduction methods; 5) the ultimate disposal method; and 6) onsite control requirements.

- Solid waste should be reduced in volume through: 1) grinding, chipping, shredding, pummeling, or otherwise breaking up the material; 2) controlled incineration (burning) using generally accepted, engineered systems; or 3) recycling, recovering, reusing materials such as metals, wood, and soil / sediment.

- Acceptable methods for disposing of solid waste (after reduction, as appropriate) include: 1) landfills; 2) incineration (wood, tires, plastics, paper); 3) recycling / processing (of certain C&D materials such as metals and wood, as well as soil / sediment, chips / mulch, and scrap tires); and 4) energy recovery / cogeneration (wood / tires).

- Refer to the section on page 121 titled "Disaster Debris Management of Wastes: Part 115, Solid Waste Management" for additional details on emergency exemptions, approval and permitting.

EMERGENCY STORAGE OF HAZARDOUS WASTE

- Industrial and commercial facilities may already be generators and can continue to accumulate their waste onsite as necessary prior to disposal. Because of the risks of mixing incompatible materials, these materials should not be consolidated at central storage locations. Limited treatment by generators may be conducted onsite in tanks or containers if necessary.

- Household hazardous waste and certain exempt small quantity generator waste are exempt from management under Part 111. These materials can be collected and stored at central locations for shipment off site to final disposal. Care in management is still necessary to prevent incompatibility problems.

- In major declared emergencies / disasters, the MDEQ Director can grant authority for emergency treatment, storage, and disposal activities without a license. An identification number will have to be obtained from the MDEQ.

MASS DISPOSAL OF DEAD ANIMALS

- Disposal of the bodies of dead animals (animal carcasses) is governed by a separate statute – the Bodies of Dead Animals Act, 1982 PA 239, as amended – and is coordinated by the Michigan Department of Agriculture (MDA) for livestock and/or the Michigan Department of Natural Resources (MDNR) for wildlife. In addition, the Michigan Department of Community Health (MDCH) and local health departments would (as needed) be involved in issuing health advisories to protect the public health from the threats posed by dead animal carcasses and the handling of such carcasses.

- In the event of a widespread animal disease outbreak or other disaster that requires the mass disposal of dead animals, the MSP/EMHSD will work (as appropriate) with the MDA, MDNR, MDCH, MDEQ, Michigan State University Extension Service, and involved federal regulatory agencies (e.g., U.S. Department of Agriculture, U.S. Fish and Wildlife Service, etc.) to ensure that the required disposal operations are carried out in a timely and appropriate manner.

DISASTER DEBRIS MANAGEMENT OF WASTES
PART 115, SOLID WASTE MANAGEMENT

PART 115 REGULATIONS

According to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, all solid waste must be properly characterized and disposed in a licensed disposal facility consistent with each county's Solid Waste Management Plan. Information related to these plans, including contact information, may be found at the http://www.michigan.gov/deq/0,1607,7-135-3312_4123-9884--,00.html. Part 115 contains a number of exemptions related to management of solid during an emergency, which are listed below. While the MDEQ would prefer that solid waste be recycled for a beneficial use it may not be possible due to the volume of material generated or the contaminants it may contain.

R 299.4112 Emergency disposal; conditions for approval.
Rule 112:

(1) If a material poses a threat or substantial nuisance to the public or the environment, a person may petition the director to approve the emergency disposal of the material as follows:
(a) At a location that is not licensed pursuant to the provisions of the act.
(b) At a disposal area that is licensed pursuant to the provisions of the act, but is not authorized by a county plan.
(c) In a manner that is not in accordance with the provisions of the act or these rules.
(2) Approval of emergency disposal by the director, or his or her designee, if granted, shall be in compliance with all of the following provisions:
(a) Be oral or written. If oral, it shall be followed by written approval within 5 days.
(b) Not be more than 90 days in duration.
(c) Clearly specify the type and quantity of material and the manner and location of its disposal.

R 299.4434 Type II landfill operation; air criteria.
Rule 434:

(1) The owner and operator of a type II landfill shall ensure that the unit is not in violation of any applicable requirements developed under part 55 of the act or the state implementation plan approved or promulgated by the administrator under section 110 of the clean air act, as amended.
(2) The burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, land-clearing debris, diseased trees, or debris from emergency cleanup operations, is prohibited at all type II landfills.
(3) The burning of waste specified in subrule (2) of this rule shall be conducted only in designated areas with the permission of the solid waste control agency and other appropriate authorities. Suitable measures shall be available to extinguish accidental fires.

324.11506 Definitions; S to Y.
Sec. 11506:

(1) "Solid waste" means garbage, rubbish, ashes, incinerator ash, incinerator residue, street cleanings, municipal and industrial sludges, solid commercial and solid industrial waste, and animal waste other than organic waste generated in the production of livestock and poultry. Solid waste does not include the following:
(h) Materials approved for emergency disposal by the department.

324.11526c Order restricting or prohibiting solid waste transportation or disposal in this state.
Sec. 11526c:

(1) The director may issue an order restricting or prohibiting the transportation or disposal in this state of solid waste originating within or outside of this state if both of the following apply:
(a) The director, after consultation with appropriate officials, has determined that the transportation or disposal of the solid waste poses a substantial threat to the public health or safety or to the environment.
(b) The director determines that the restriction or prohibition on the transportation or disposal of the solid waste is necessary to minimize or eliminate the substantial threat to public health or safety or to the environment.
(2) At least 30 days before the director issues an order under subsection (1), the department shall post the proposed order and its effective date on its website with information on how a member of the public can comment on the proposed order and shall provide a copy of the proposed order to the members of the standing committees of the senate and house of representatives that consider legislation pertaining to

public health or the environment. Before issuing the order, the director shall consider comments received on the proposed order. The department shall post the final order on its website beginning not later than the final order's effective date. This subsection does not apply in an emergency situation described in subsection (3).

(3) In an emergency situation posing an imminent and substantial threat to public health or safety or to the environment, the director, before issuing an order under subsection (1), shall provide a copy of the proposed order to the members of the standing committees of the senate and house of representatives that consider legislation pertaining to public health or the environment and publicize the proposed order in any manner appropriate to help ensure that interested parties are provided notice of the proposed order and its effective date. The department shall post the final order on its website as soon as practicable.

(4) An order issued pursuant to this section shall expire 60 days after it takes effect, unless the order provides for an earlier expiration date.

(5) Subsections (2) and (3) do not apply to the reissuance of an order if the reissued order takes effect upon the expiration of the identical order it replaces. However, the department shall post the reissued order on its website beginning not later than the reissued order's effective date.

(6) A person may seek judicial review of an order issued under this section as provided in section 631 of the revised judicature act of 1961, 1961 PA 236, MCL 600.631.

(7) The director shall rescind an order issued under this section when the director determines that the threat upon which the order was based no longer exists.

As can be seen from the Part 115 statute and rules above the solid waste regulations allow for the temporary suspension of numerous requirements, during an emergency, related to 1) disposal of solid waste at a licensed facility; 2) disposal consistent with county plans; 3) burning of debris from emergency cleanup operations at a licensed landfill; and 4) in a manner not consistent with the statute or rules.

PART 115 EXEMPTIONS

The Part 115 statute and rules contain numerous exemptions for materials that may be beneficially reused without a permit or license from the MDEQ. The statute lists numerous materials as site / source separated materials, which are not solid wastes, which include glass, metal, wood, paper products, plastics, rubber, textiles, garbage, yard clippings, or any other materials approved by the department. Rule 114 contains a number of exemptions that relate to materials that could be generated from an emergency. The list includes, trees, stumps, and other land clearing debris that is buried at the site of generation or at another site approved by the land owner; construction brick, masonry, pavement, and broken concrete that is used as rip rap, fill, slope stabilization, or other construction purposes; and other materials approved by the director.

In addition to the exemptions contained in the statute and rules the department has issued authorizations for other materials that might be generated during an emergency. An authorization for gypsum drywall (http://www.deq.state.mi.us/documents/deq-whm-stsw-gypsumdrywallexemption.pdf) and scrap wood (http://www.deq.state.mi.us/documents/deq-whmd-stsw-ScrapWoodExemption.pdf) have been issued by the department.

RECYCLING

There are many opportunities to recycle materials that could be generated during an emergency. The “Green Construction and Demolition” web-site located at http://www.michigan.gov/deq/0,1607,7-135-3585_4127_24843---,00.html contains useful links to managing waste. Included at this is a Q&A on managing construction and demolition wastes as well as a link to the “Recycled Materials Market Directory” which lists many outlets for recyclable materials.

STORAGE

According to Rule 129, construction and demolition waste that is stored at the site of generation for less than one year, prior to being disposed, does not require a construction permit or operating license. Owners / operators of these waste piles must ensure that the storage does not violate Part 31, Water Resources Protection, or Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act.

MDEQ CONTACTS

Any questions related to obligations under Part 115 or the process to enact the emergency procedures listed above should be directed to the local district office of the Waste and Hazardous Materials Division. Contact information may be found at the following location http://www.michigan.gov/deq/0,1607,7-135--12306--,00.html.

DEBRIS COLLECTION AND MANAGEMENT SITE ANALYSIS GUIDANCE TOOL

(Adapted from FEMA Publication 325, "Public Assistance Debris Management Guide")

Disaster debris collection and management sites pose a multitude of health and safety concerns. Hazards and exposures are a function of the unstable nature of the site, the potential of hazardous substances being present, and the type of work being performed. The following guidance tool will be used by affected local jurisdictions and the State Debris Manager to conduct site hazard assessments as part of the overall Health and Safety Plan developed for the debris operation.

Hazard	Risks	General Safety Recommendations
General Site Safety Checklist:	All types of accidents and illnesses.	• Conduct a job hazard analysis to identify hazards prior to beginning site work. • Assign key personnel and alternates responsible for site safety. • Describe risks associated with each operation conducted. • Confirm that personnel are adequately trained to perform jobs. • Describe the protective clothing and equipment to be worn by personnel during site operations. • Describe needed air monitoring, personnel monitoring, and environmental sampling. • Describe actions to be taken to mitigate existing hazards to make the work environment less hazardous.
HAZARD 1: Massive piles of woody debris and other types of debris; unstable work surfaces.	Traumatic, serious, or fatal injuries or illnesses can occur due to slips, trips, falls, or collapsing materials.	• Ensure that surfaces are as stable as possible. • Ensure scaffolding is erected on a stable surface; anchor scaffolding to a structure capable of withstanding the lateral forces generated. • Ensure workers have ANSI approved safety footwear with slip resistant soles. Consider drop and roll over hazards as well as puncture hazards. • Site personnel to be observant of changes in walking surfaces.
HAZARD 2: Hazardous noise.	Communication and possible noise induced hearing loss.	• Monitor noise levels. If 8-hour time-weighted average exposures are 85 decibels (dB) or more, a Hearing Conservation Plan is needed. • Try engineering out workplace noise by isolating the equipment, reducing the equipment vibration, or installing sound barriers. • Consider hearing protection devices be used whenever noisy equipment (e.g., large trucks, grinding equipment, loaders, generators, large motors, etc.) is used.
HAZARD 3: Breathing dust containing fine airborne particles and gases generated through diesel exhaust fumes, smoke, ash, and road dust.	Irritation of eye, nose, throat, and lungs.	• Workers should be protected from breathing airborne contaminants as determined through the site's analysis of respiratory hazards. • Respiratory protection: determine respirator type, as needed, through site specific hazard analysis. • Respirators must fit properly to protect workers. • Dust concentrations in the air should be appropriately monitored. • Stay upwind of dust generating activities. • Maintain low speeds on construction equipment to keep dust down. • Airborne dust may be suppressed by application of water based mist.
HAZARD 4: Heat stress from working in a hot, humid climate	Significant fluid loss can progress to clinical dehydration, raised core body temperature, impaired judgment, disorientation, fatigue, muscle cramping, resulting in heat stroke.	• Adjust work schedules, rotate personnel, and add additional personnel if needed. • Replenish fluids (e.g. – water, electrolytes) as needed. • Consider personnel and environmental monitoring plans. • Know the warning signs of heat related illnesses. • Provide shelter for personnel in shaded areas. • Where possible, block out sun or other direct sources of heat from fixed work locations. • Prevent sun related overexposure to skin by using a sunscreen lotion with a significant SPF of 15 or greater.

DEBRIS COLLECTION AND MANAGEMENT SITE ANALYSIS GUIDANCE TOOL (cont.)

Hazard	Risks	General Safety Recommendations
HAZARD 5: Cold stress from working in a cold, wet climate.	This allows exposed skin and the extremities to cool rapidly and increases the risk of frostbite and hypothermia.	• Get into heated shelter as necessary to maintain body temperature. • Replace wet clothing immediately. • Drink warm fluids often. • Wear adequate clothing to reduce threat of cold stress. • Know the signs of cold stress.
HAZARD 6: Carbon monoxide risk from heaters, gasoline or propane-powered generators, or heavy machinery.	Headache, dizziness, drowsiness, or nausea. This may progress to vomiting, loss of consciousness, and collapse. Coma or death may occur under prolonged or high exposures.	• Use CO warning sensors when using or working around combustion sources since CO has no warning properties. CO is a colorless and odorless gas. • Shut off equipment or machinery immediately if symptoms of exposure appear and immediately go to a fresh air source or location. • Do not use gasoline generators or portable heaters in confined spaces or poorly ventilated areas.
HAZARD 7: Work zone traffic hazards.	Traumatic or fatal injuries due to failure of or improper use of equipment or workers being struck by moving equipment.	• Establish a traffic control plan for motorists and pedestrians. • Use standard highway signs and control devices to instruct drivers. • Use barriers (concrete, water, sand, collapsible barriers, crash cushions, and truck-mounted attenuators) to limit motorist intrusion into the work zone. • High visibility safety garments should be provided to those providing temporary traffic control (class 2 or 3) and workers on foot (class 1, 2, or 3). • Seat belts and rollover protection should be used on equipment and vehicles as stated by the manufacturer. • Workers on foot, equipment operators, and drivers in internal work zones need to know the routes construction vehicles will use. • Be mindful of limited visibility (e.g., blind spots) which heavy machine operators have while driving machines at the work site. • Maintain safe driving distances, avoid using cell phones while driving, and obey all traffic laws.
HAZARD 8: Eye, face, hand, and head injuries from flying debris; wood particles.	Traumatic injuries, ranging from minor injuries requiring first aid to serious eye injuries, even disabling or fatal traumatic injuries.	• Only use protective eyewear, face shields, and protective head wear that are ANSI approved. • Educate workers regarding safe work procedures before beginning work. • Provide workers with a full array of personal protective equipment, including hard hats, safety shoes, eyeglasses, and work gloves. • Ensure that workers do not walk under or through areas where cranes and other heavy equipment are being used to lift objects. • Proper eye protection (e.g., goggles or safety glasses). • As a minimum requirement, use of safety glasses with side shields by all site workers. Face shields are not a substitute for safety glasses. • Use safety goggles for protection from fine dust particles rather than using regular prescription eyeglasses. • Choose hand protection to fit the hazards determined through the hazard analysis (e.g., laceration hazards, need for gripping, need for dexterity, etc.). • Stay outside the 300-foot safety zone while a chipper is in operation. • Check the kick-back device on chainsaws before use.

DEBRIS COLLECTION AND MANAGEMENT SITE ANALYSIS GUIDANCE TOOL (cont.)

Hazard	Risks	General Safety Recommendations
HAZARD 9: Use of various types of heavy equipment, including cranes, bucket trucks, skid-steer loaders, etc.	Traumatic injury, including serious and fatal injuries, due to failure of or improper use of equipment or workers being struck by moving equipment.	• Wear safety vests. Safety orange vests with reflective stripes are recommended. • Ensure operators are aware of the activities around them to protect workers on foot from being struck by moving equipment. • Ensure that workers do not walk under or through areas where cranes or other heavy equipment are being used to life objects. • Ensure that workers do not climb onto or ride loads being lifted or moved. • Ensure that equipment warning devices are working (flashers, strobes, back-up alarms). • Machinery is to be inspected by a qualified worker before each use, per OSHA requirements. • Stay at least 20 feet beyond maximum equipment swing radius or movement areas. Assign spotters as needed. • Do not exceed the load capacity of cranes and other lifting equipment.
HAZARD 10: Chemicals, flammables, and combustibles.	Traumatic, serious, or fatal injuries or illnesses can occur due to inhalational, dermal, and fire hazards.	• Ensure that hazardous waste (e.g., batteries, PVC piping, solvents, pesticides, compressed gas cylinders, etc.) are properly separated from “burnable” trash. • Utilize GFCI for any extension cords or power tools. • Store gasoline in an approved container not to exceed 5-gallon capacity. • Allow gasoline power tools to cool down prior to refueling. • Ensure containers are bonded and grounded during dispensing. • Ensure adequate fire extinguishers are available at work sites and on work vehicles. • Maintain a fire watch during all fire-related activities until material has been extinguished and cooled. • If possible, avoid establishing debris management sites (TDSR Sites) where there is a limited public water supply, lack of 911 service, or delays in fire department response time.
HAZARD 11: Isolated work areas and sanitation.	Remote locations delay response times from emergency providers. Precaution can reduce the severity of the event.	Water-borne disease: • Always wash hands. • Use hand sanitizers frequently. • Exercise good housekeeping. • Only drink from proven potable water sources. Blood-borne disease: • Use latex or similar type gloves when handling remains. • Replace gloves if punctured or torn. • Receive appropriate vaccinations (Hepatitis A and B, Tetanus, Diphtheria, etc.). • Avoid standing water. • Observe universal precautions. Food-borne disease: • Identify and dispose of food that may not be safe to eat. • Handle food properly. • Keep a supply of water and food on hand. • Rest when off duty. Emergencies: • Know the location and phone numbers of the nearest hospital, doctor, and police. • Carry a first-aid kit. • Know the address or nearest cross-road of work site to notify emergency responders.

DEBRIS COLLECTION AND MANAGEMENT SITE ANALYSIS GUIDANCE TOOL (cont.)

Hazard	Risks	General Safety Recommendations
HAZARD 12: Insects, animals, reptiles, and plants.	Traumatic, serious, or fatal injuries or illnesses can occur due to insect or animal bites.	Protection from plants: • Be alert of poisonous plants. • Use barrier creams if available. • Wash affected area after contact. Protection from wild or stray animals: • Avoid animal habitats (infested areas, rodent burrows, and nests). • Do not attempt to take custody of animals unless properly trained. • Avoid wild or stray animals. Assume all animals are rabid. Call local authorities to handle animals. • Dispose of animal carcasses according to local guidelines. Protection from insects (mosquitoes, bees, spiders, fire ants, etc.): • Wear appropriate clothing (long pants, socks, long sleeved shirts, etc.). • Avoid infested areas. • Use insect repellents that contain DEET or Picaridin, when necessary. Protection from snakes: • Assume all snakes are poisonous. Be on alert for snakes that may be hiding in unusual places after flooding. • Seek immediate medical attention if you are bitten. • Try to identify the snake so that if it is poisonous you can be given the correct anti-venom.
HAZARD 13: Power lines and gas lines.	Traumatic, serious, or fatal injuries or illnesses can occur due to electrocution.	• Treat all power lines and cables as energized until proven otherwise. De-energized lines can be energized by a secondary power source such as a backup generator. • Use appropriately grounded low voltage equipment. • Do not approach detected gas leaks. • Contact utilities (e.g., utility locator service) for buried power line locations. • Stay at least 10 feet away from live overhead power lines. • Get the owner or operator of the lines to de-energize and ground lines when working near them. • Use non-conductive wood or fiberglass ladders when working near power lines. • Keep area burn piles, observation areas, and areas where heavy equipment is used away from power lines and other electrical equipment.
HAZARD 14: Debris towers	Traumatic, serious, or fatal injuries or illnesses can occur due to falls from elevated surfaces.	• Inspect scaffolds and scaffold components for defects before each work shift and after any incident which could affect structural integrity. • Provide adequate buffer zones around the tower. • Anchor the scaffold to prevent displacement from wind with guide wires. • Do not exceed load capacity of the scaffold. • Footing of the tower must be level, sound, rigid, and capable of supporting the load without settling or displacement. • A standard guardrail (top, mid, toe) and handrail system must be installed along all open sides. • Provide appropriate ventilation if a heating system is present. • No smoking. • Use established construction guidance (e.g., US Army Corps of Engineers).
HAZARD 15: Aerial lifts and scissor lifts.	Traumatic, serious, or fatal injuries or illnesses can occur due to falls, tip-overs, and pinch points.	• Only trained and authorized people may operate the lift. • Check for overhead objects before use. • Stay far from debris piles, drop-offs, and floor openings. • Never use equipment near electric lines unless the lines are de-energized or adequate clearance is maintained. • Refuel tanks only when the machine is off. • Elevate the lift only when it is on a firm and level surface. • Never drive the lift when in the extended position.

DEBRIS COLLECTION AND MANAGEMENT SITE ANALYSIS GUIDANCE TOOL (cont.)

Hazard	Risks	General Safety Recommendations
HAZARD 16: Severe weather.	Traumatic, serious, or fatal injuries or illnesses can occur due to hypothermia, hyperthermia, and lightning strikes.	• Monitor local weather conditions regularly. • Recognize the signs of an oncoming thunder and lightning storm and seek shelter. • Avoid small sheds, wooded areas, metal fences, and open areas.

CASE STUDY: "TREE CENTRAL" IN MICHIGAN

The following is a compendium of selected materials from the disaster debris management operations conducted by the MSP/EMHSD following tornadoes and severe storms in Southeast Michigan and the Detroit metropolitan area in July 1997, and severe storms in Southwest Michigan in early June 1998. Those debris management operations were directed from the Michigan State Fairgrounds in Detroit (in 1997) and the State Emergency Operations Center (in 1998), and were commonly known as "Tree Central." This case study will provide instructive examples of how disaster debris operations have been handled in Michigan in the past and will also serve as a guide and resource for future events.

Project Statement and Scope of Work for Storm Debris Cleanup

(Note: The MSP/EMHSD conveyed the following information to Local Emergency Management Coordinators and other involved parties, in a June 1998 Memorandum. It is presented here with no modifications to the text.)

The State of Michigan through the Emergency Management Division (EMD) of the Michigan State Police is providing direct assistance to the affected jurisdictions in the removal of storm damaged trees and debris from public right of ways, public drains, public parks, and other public facilities such as school yards. The EMD has established a command center called Tree Central at the State Emergency Operations Center. Thomas Newell of the Emergency Management Division is the State Project Manager for Tree Central operations.

State Responsibility

- The Emergency Management Division, through Tree Central will contract with private tree removal contractors to assist the local jurisdictions in the removal of the storm debris. Tree Central will oversee all contractor operations and provide quality assurance to the local jurisdictions in the removal of the storm debris. Tree Central will oversee all contractor operations and provide quality assurance to the local jurisdictions participating in the debris cleanup. Guidelines have been established below for both the debris removal contractors and the local jurisdictions. Once the site(s) is judged to be cleaned up by the jurisdiction, Tree Central will provide final inspection and approval or require further cleanup as needed. The EMD will handle all payment arrangements with the contractors used by Tree Central.

- The Emergency Management Division will be expecting that all clean up will be done as quickly and efficiently as possible. The goal is to have the work completed no later than June 30, 1998.

Priority Statement

The intent of this effort is to first remove damaged trees and debris from the right of ways. This should reduce the immediate hazard to motorist and pedestrians.

Local Jurisdiction Responsibility

1. Identify contact person(s) to coordinate tree debris removal activities. Include office, home, pager, fax, and cellular numbers.
2. Provide a list (names & telephone numbers) of local tree removal contractors that are interested in contracting with Tree Central for this project.
3. Identify one or more sites that can be used for storage of wood chips, logs and other debris removed from the public areas. Recommended a 5 acre or larger site. The site should be capable of long term storage.
4. Provide ultimate disposal of debris transported to the storage sites(s).
5. Provide ultimate disposal of tree stumps flush cut or otherwise not removed by the contractors.
6. Provide a list of saw mills or other companies that have expressed an interest in removing the logs and chips generated during this operation.

7. Identify the boundaries of all public right of ways and other public areas if not clearly marked.
8. Provide personnel and maps or other information necessary to assist the contractors in identifying or locating public areas that need debris removal. Personnel must be available to the contractors during work hours, Monday through Saturday, 7:00 a.m. to 5:00 p.m.
9. As contractors are deployed to your jurisdiction, provide Tree Central with a rendezvous site where they can meet up with your personnel.
10. Provide final inspection and approval of the completed work.
11. Notify residents in the affected areas that they must bring all debris out to the right of way for pick up and removal by our contractors.

Contractor Responsibility

1. Identify single point of contact for obtaining personnel and equipment.
2. Working hours will generally be 7:00 a.m. to 5:30 p.m. Monday through Saturday unless directed otherwise by Tree Central.
3. Trim or remove all storm damaged trees and accumulated debris from right of ways, and other public areas identified by the local jurisdictions and approved by Tree Central. All debris that is chipped or otherwise cut up shall be transported to the storage sites identified within each jurisdiction.
4. All trees removed shall be flush cut with the ground surface. Uprooted stumps will either be left in place or removed and transported to the storage sites. Disposal of the stumps and/or grinding of in place stumps will remain the responsibility of the local unit of governments.
5. Wherever possible the debris removal shall be to pre storm conditions.
6. Unless directed by Tree Central, the contractors are not to remove storm debris from any areas (public or private) not approved by Tree Central.
7. The contractors will keep a daily record of all activity on forms supplied by Tree Central.

Fax all requested information to the SEOC, Attention: Tree Central at 517-333-4987. Please direct all questions to Mr. Newell at 517-333-4633.

On Scene Command: Contractor Procedures for Tree Central Operations

(Note: The MSP/EMHSD conveyed the following information to Local Emergency Management Coordinators and other involved parties, in a June 1998 Memorandum. It is presented here with no modifications to the text.)

The following procedures should help the storm debris cleanup go smoothly for the contractors working for Tree Central. It should be noted that Tree Central will provide each contractor with detailed directions to the initial staging area in the affected jurisdiction. You will also be provided with the Local Jurisdiction Contact (LJC) name and telephone number as well as all necessary Tree Central staff names and telephone numbers.

1. Report in by telephone to Tree Central upon arrival at the Local Jurisdiction Staging Area.
2. Exchange names and telephone numbers with your LJC and obtain maps or other documentation that precisely identify the work areas. A representative of the jurisdiction will probably accompany you to the initial locations until your crews are familiar with the work areas.
3. Obtain location of long term disposal site(s) from your LJC.
4. Maintain daily contact with Tree Central by telephone or facsimile of work completed or planned.
5. Provide list of General Foreman with phone numbers, Crew Foreman names and total personnel assigned to your crews.
6. Work hours will generally be 7:00 a.m. to 7:30 p.m., Monday through Saturday. Note: Work hours modified June 12, 1998. Shorter hours are acceptable if approved by the local jurisdiction and reported to Tree Central by the General Foreman.
7. Scope of Work:
    - Trim or remove storm damaged trees on Right of Ways (ROW) identified by your LJC.
    - Once all ROWs are cleared, inspected and approved by the jurisdiction, than work in the parks, county drains or other area identified by the local unit of government and approved by Tree Central.
    - Chip small debris on site.
    - Flush cut to the ground all remaining stumps.
    - All other large logs and uprooted stumps must be recorded by location on the enclosed forms and reported by facsimile to Tree Central for later collection and removal to the long term storage locations.

8. There is no authorization for storm debris work on private property. Confine all your efforts to those areas identified by the local jurisdictions and approved by Tree Central.
9. Keep daily records on the **Individual Crew Production Report** supplied by Tree Central. These are daily records of work activity, crew names, man hours, location, number of trees trimmed or removed, and number of loads of chipped debris. These reports will be summarized by your General Foreman. The General Foreman will fax the **General Foreman Production Summary** to Tree Central at the end of each work day.

Sample Forms Used in Tree Central:

Heavy Equipment Tracking Log

Number	Date	Time	Type of Equipment	Sent From	Sent To
1	08-Jul	6:00 PM	Maxi-Grinder	ABC	Highland Pk
2	08-Jul	6:00 PM	JD 644 Front-End Loader	ABC	Highland Pk
3	11-Jul	9:00 PM	JD Excavator	ABC	Highland Pk
4	11-Jul	9:00 PM	JD544 Front-End Loader	ABC	Highland Pk
5	12-Jul	9:00 AM	1 Prentice Loader	Terry Tree	Detroit
6	12-Jul	8:00 AM	1 Front-End Loader	ABC	Highland Pk
7	12-Jul	11:00 AM	2 Prentice Loaders	Terry Tree	Detroit
8	12-Jul	11:00 AM	Morbark 1250 Tub Grinder	Terry Tree	French Rd
9	12-Jul	11:00 AM	JD644 Front-End Loader	Terry Tree	French Rd
10	13-Jul	9:00 AM	5 Prentice Loaders	ATE- Bostock Reg.	Detroit
11	13-Jul	9:00 AM	1 Tag Truck	ATE-Bostock Reg.	Detroit
12	13-Jul	2:40 PM	Tag Truck w/ Trailer	ATE-Bostock Reg.	Detroit

Uprooted Stump Location Report

Item #	Grid #	Street No	Street Address	Front or Back	# of Stump	Date Recorded	Field Comments	Date Completed
413	1	15473	Indiana	B	1	07/22/1997		08/01/1997
412	1	15476	Indiana	B	1	07/22/1997	Backhoe	08/01/1997
508	1		Indiana & Midland N.E. Corner	F	1	Reported by Detroit	Removed by Others	08/13/1997
416	1	16143	Kentucky	B	1	07/22/1997		08/01/1997
415	1	15817	Monica	B	1	07/22/1997	No Fill	08/01/1997
414	1	7440	Pilgrim	F	1	07/22/1997		08/01/1997
509	2	7017	Chalfonte	F	1	Reported by Detroit	Removed by Others	08/13/1997
510	2	7025	Chalfonte	F	1	Reported by Detroit	Removed by Others	08/13/1997
511	2	7043	Chalfonte	F	1	Reported by Detroit	Removed by Others	08/13/1997
430	2	7060	Chalfonte	F	1	07/22/1997		08/01/1997
443	2	7103	Chalfonte	Side	1	08/04/1997		08/04/1997
512	2	7117	Chalfonte	F	1	Reported by Detroit	Removed by Others	08/13/1997
513	2	7307	Chalfonte	F	1	Reported by Detroit	Removed by Others	08/13/1997
514	2	7315	Chalfonte	F	1	Reported by Detroit	Removed by Others	08/13/1997
515	2	7321	Chalfonte	F	1	Reported by Detroit	Removed by Others	08/13/1997

Daily Work Assignments For: (insert date)

Grid #	Grid Description	Percent Completed	Name of Contractor	Other Crews	Contractor Contact / Telephone #	# of Crews	Local Approval, Name / Date	Tree Central Approval
1	Mason Co.							
2	Oceana Co.							
3	Newaygo Co.							
4	Mecosta Co.							
5	Bay Co.							
6	Muskegon Co.							
7	Montcalm Co.							
8	Gratiot Co.							
9	Saginaw Co.							
10	Ottawa Co.							
11	Kent Co.							
12	Ionia Co.							
13	Clinton Co.							
14	Shiawassee Co.							
15	Macomb Co.							

Daily Project Status Report (Grid System)

Grid #	07/31/1997 % Completed	07/30/1997 % Completed	07/29/1997 % Completed	07/28/1997 % Completed	07/27/1997 % Completed	07/26/1997 % Completed	07/25/1997 % Completed	07/24/1997 % Completed	07/23/1997 % Completed	07/22/1997 % Completed
1	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997
2	85	80	70	70	50	60	60	50	50	50
3	100% July 21, 1997	100% July 21, 1997	100% July 21, 1997	100% July 21, 1997	100% July 21, 1997	100% July 21, 1997	100% July 21, 1997	100% July 21, 1997	100% July 21, 1997	100% July 21, 1997
4	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997
5	100% July 24, 1997	100% July 24, 1997	100% July 24, 1997	100% July 24, 1997	10	100% July 24, 1997	100% July 24, 1997	40	40	10
6	100% July 28, 1997	100% July 28, 1997	100% July 28, 1997	95	25	90	90	50	50	25
7	100% July 20, 1997	100% July 20, 1997	100% July 20, 1997	100% July 20, 1997	100% July 20, 1997	100% July 20, 1997	100% July 20, 1997	100% July 20, 1997	100% July 20, 1997	100% July 20, 1997
8	100% July 23, 1997	100% July 23, 1997	100% July 23, 1997	100% July 23, 1997	30	100% July 23, 1997	100% July 23, 1997	100% July 23, 1997	100% July 23, 1997	30
9	100% July 28, 1997	100% July 28, 1997	100% July 28, 1997	60	30	60	60	60	60	30
10	100% July 23, 1997	100% July 23, 1997	100% July 23, 1997	100% July 23, 1997	95	100% July 23, 1997	100% July 23, 1997	100% July 23, 1997	100% July 23, 1997	95
11	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997	100% July 14, 1997
12	100% July 22, 1997	100% July 22, 1997	100% July 22, 1997	100% July 22, 1997	95	100% July 22, 1997	100% July 22, 1997	100% July 22, 1997	100% July 22, 1997	95
13	100% July 25, 1997	100% July 25, 1997	100% July 25, 1997	100% July 25, 1997	90	90	90	80	80	90
14	60	40	30	25	10	10	10	10	10	10
15	90	50	0							
16	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997	100% July 13, 1997
17	100% July 17, 1997	100% July 17, 1997	100% July 17, 1997	100% July 17, 1997	100% July 17, 1997	100% July 17, 1997	100% July 17, 1997	100% July 17, 1997	100% July 17, 1997	100% July 17, 1997
18	80	80	50	50	10	30	30	10	10	10

Short Term Generator Disposal Contract

(Note: Following are samples of the contracts the MSP/EMHSD entered into with the Greater Detroit Resource Recovery Authority in July 1997 for the use of shredded wood debris from the disaster for cogeneration purposes. In some places, specific information has been excluded from these sample contracts. The contracts are provided for illustrative purposes only and would have to be modified to fit the unique situational circumstances presented in future disasters.)

Greater Detroit
Resource Recovery Authority

5700 Russell Street ● Administration Building ● Detroit, Michigan 48211-2545
(XXX) XXX-XXXX ● Fax (XXX) XXX-XXXX

SHORT TERM GENERATOR DISPOSAL CONTRACT

No. G-0129

This agreement, dated this [3rd] day of [July 1997] is between the [Michigan Department of State Police, Emergency Management Division, 4000 Collins Rd., P.O. Box 30636, Lansing, Michigan 48909-8136, Attn: Capt. Robert Tarrant or Tom Newell, (XXX) XXX-XXXX] (GENERATOR), and the Greater Detroit Resource Recovery Authority ("AUTHORITY").

Subject to the terms and conditions stated below, the AUTHORITY agrees to accept certain materials from the GENERATOR and dispose of it in accordance with all applicable local, state and federal laws and regulations.

1. GENERATOR HEREBY ACKNOWLEDGES THAT THE MATERIAL PRESENTED FOR DISPOSAL IS NOT HAZARDOUS WASTE under Michigan's Hazardous Waste Management Act (1979 PA 64, Michigan Compiled Laws Sec. 299.501, et seq.), and does not contain:

    a. Known hazardous waste material which, because of its quantity or quality or concentration, or physical or chemical or infectious characteristics, can be determined to cause or significantly contribute to an increase in serious irreversible or incapacitating irreversible illness, and/or pose a substantial hazard to human health or the environment when properly treated, stored, transported, disposed or otherwise managed;

    b. Industrial waste, meaning waste material resulting from industrial operations;

    c. Human body or animal waste;

    d. Liquid waste;

    e. Infectious or hospital waste;

    f. Sewage; or

    g. Any item which contains an EPA registration number or EPA label relating to handling or disposal.

2. TIPPING FEE: $35.00 per ton, with a minimum one ton charge per delivery.

3. DESCRIPTION OF MATERIAL: "Shredded Tree Debris" resulting from the severe storms, tornadoes and flooding that struck the State of Michigan, Wayne County, on July 2 and was subsequently declared a major disaster by the President of the United States. THE SHREDDED TREE DEBRIS DESCRIBED IN BOTH THIS AGREEMENT AND THE PRESIDENTIAL DECLARATION SHALL BE FROM STORM DAMAGE SUSTAINED IN THE CITY OF DETROIT AND THE CITY OF HIGHLAND PARK, MICHIGAN AND OTHER WAYNE COUNTY AREAS COVERED BY THE PRESIDENTIAL DECLARATION.

4. DELIVERY PROCEDURE: Waste shall be delivered and unloaded by GENERATOR or its authorized agent, at the AUTHORITY'S facility, as directed by the AUTHORITY (see facility map) at 7:00 AM, 11:00

AM, or 3:30 PM; GENERATOR shall give the AUTHORITY 24 hours notice of delivery date (by calling XXX-XXXX or XXX-XXXX). Delivery hours are as set in the 7/16/97 memo attached.

5. If the AUTHORITY is unable to process waste for any reason, including mechanical failures, routine maintenance, labor disputes, legal actions or governmental actions, the AUTHORITY MAY REFUSE TO ACCEPT GENERATOR'S waste upon giving GENERATOR 24 hour notice either in writing or by phone.

6. AUTHORITY'S RIGHT TO INSPECT AND REJECT MATERIAL: The AUTHORITY is prohibited by law from processing certain materials, including those described in paragraph 1 above. Therefore, the AUTHORITY reserves the right, and GENERATOR acknowledges AUTHORITY'S right to inspect all material delivered to the facility by or on behalf of GENERATOR. If such material is found to be unacceptable, the AUTHORITY shall have the right to reject it, and GENERATOR shall be liable for any costs incurred by the AUTHORITY for removing such material from the facility (and if required, any costs related to proper disposal). For purposes of this paragraph "unacceptable material" shall mean <u>any</u> material matching those materials described in paragraph 1 (a) through (g) above, or any significant quantity of material which substantially deviates from the GENERATOR'S description of material listed in paragraph 3 above.

7. AUTHORIZED HAULER (if other than GENERATOR): <u>Generator</u>.

8. TERM: This agreement shall be effective as of the date first appearing above and shall expire on December 31, 1997. It may be extended by written approval from both the GENERATOR and the AUTHORITY.

9. PAYMENT, which shall be due upon issuance of invoice should be made payable to XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX and sent to:

(Name and address of bank)

GENERATOR'S failure to pay any invoice within 10 days of receipt may result in requiring advance payment, or termination of this agreement.

10. The duly authorized representatives of GENERATOR and the AUTHORITY having read all provisions of this contract and understanding them fully, hereby acknowledge this agreement by signing their names below.

MICHIGAN DEPARTMENT OF STATE POLICE, EMERGENCY MANAGEMENT	GREATER DETROIT RESOURCE RECOVERY AUTHORITY
BY: _____	BY: _____
Capt. Robert Tarrant or Tom Newell	XXXXXXXXXXXXXXXXXXX
ITS: Project Manager	ITS: XXXXXXXXXX

Greater Detroit
Resource Recovery Authority

5700 Russell Street ● Administration Building ● Detroit, Michigan 48211-2545
(XXX) XXX-XXXX ● Fax (XXX) XXX-XXXX

SHORT TERM GENERATOR DISPOSAL CONTRACT

No. G-0129A

This agreement, dated this [3rd] day of [July 1997] is between the [Michigan Department of State Police, Emergency Management Division, 4000 Collins Rd., P.O. Box 30636, Lansing, Michigan 48909-8136, Attn: Capt. Robert Tarrant or Tom Newell, (XXX) XXX-XXXX] (GENERATOR), and the Greater Detroit Resource Recovery Authority ("AUTHORITY").

Subject to the terms and conditions stated below, the AUTHORITY agrees to accept certain materials from the GENERATOR and dispose of it in accordance with all applicable local, state and federal laws and regulations.

1. GENERATOR HEREBY ACKNOWLEDGES THAT THE MATERIAL PRESENTED FOR DISPOSAL IS NOT HAZARDOUS WASTE under Michigan's Hazardous Waste Management Act (1979 PA 64, Michigan Compiled Laws Sec. 299.501, et seq.), and does not contain:

    a. Known hazardous waste material which, because of its quantity or quality or concentration, or physical or chemical or infectious characteristics, can be determined to cause or significantly contribute to an increase in serious irreversible or incapacitating irreversible illness, and/or pose a substantial hazard to human health or the environment when properly treated, stored, transported, disposed or otherwise managed;

    b. Industrial waste, meaning waste material resulting from industrial operations;

    c. Human body or animal waste;

    d. Liquid waste;

    e. Infectious or hospital waste;

    f. Sewage; or

    g. Any item which contains an EPA registration number or EPA label relating to handling or disposal.

2. TIPPING FEE: $35.00 per ton, with a minimum one ton charge per delivery.

3. DESCRIPTION OF MATERIAL: "Tree Trunks and Tree Stumps (unshredded)" resulting from the severe storms, tornadoes and flooding that struck the State of Michigan, Wayne County, on July 2 and was subsequently declared a major disaster by the President of the United States. THE TREE TRUNKS AND TREE STUMPS DELIVERED TO THE AUTHORITY'S DISPOSAL LOCATION SHALL BE NO GREATER THAN APPROXIMATELY SIX-FEET (6') IN LENGTH BY FOUR-FEET (4') IN DIAMETER AND WHICH WEIGHS NO MORE THAN THREE-HUNDRED (300) POUNDS. THE TREE TRUNKS AND TREE STUMPS (UNSHREDDED) DESCRIBED IN THIS AGREEMENT AND THE PRESIDENTIAL DECLARATION SHALL BE FROM STORM DAMAGE SUSTAINED IN THE CITY OF DETROIT AND THE CITY OF HIGHLAND PARK, MICHIGAN AND OTHER WAYNE COUNTY AREAS COVERED BY THE PRESIDENTIAL DECLARATION.

4. DELIVERY PROCEDURE: Waste shall be delivered and unloaded by GENERATOR or its authorized agent, at the AUTHORITY'S facility, as directed by the AUTHORITY (see facility map) at 7:00 AM, 11:00 AM, or 3:30 PM; GENERATOR shall give the AUTHORITY 24 hours notice of delivery date (by calling XXX-XXXX or XXX-XXXX). Delivery hours are as set in the 7/16/97 memo attached.

5. If the AUTHORITY is unable to process waste for any reason, including mechanical failures, routine maintenance, labor disputes, legal actions or governmental actions, the AUTHORITY MAY REFUSE TO ACCEPT GENERATOR'S waste upon giving GENERATOR 24 hour notice either in writing or by phone.

6. AUTHORITY'S RIGHT TO INSPECT AND REJECT MATERIAL: The AUTHORITY is prohibited by law from processing certain materials, including those described in paragraph 1 above. Therefore, the AUTHORITY reserves the right, and GENERATOR acknowledges AUTHORITY'S right to inspect all material delivered to the facility by or on behalf of GENERATOR. If such material is found to be unacceptable, the AUTHORITY shall have the right to reject it, and GENERATOR shall be liable for any costs incurred by the AUTHORITY for removing such material from the facility (and if required, any costs related to proper disposal). For purposes of this paragraph "unacceptable material" shall mean <u>any</u> material matching those materials described in paragraph 1 (a) through (g) above, or any significant quantity of material which substantially deviates from the GENERATOR'S description of material listed in paragraph 3 above.

7. AUTHORIZED HAULER (if other than GENERATOR): <u>Generator</u>.

8. TERM: This agreement shall be effective as of the date first appearing above and shall expire on December 31, 1997. It may be extended by written approval from both the GENERATOR and the AUTHORITY.

9. PAYMENT, which shall be due upon issuance of invoice should be made payable to XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX and sent to:

   (Name and address of bank)

   GENERATOR'S failure to pay any invoice within 10 days of receipt may result in requiring advance payment, or termination of this agreement.

10. The duly authorized representatives of GENERATOR and the AUTHORITY having read all provisions of this contract and understanding them fully, hereby acknowledge this agreement by signing their names below.

MICHIGAN DEPARTMENT OF STATE POLICE, EMERGENCY MANAGEMENT	GREATER DETROIT RESOURCE RECOVERY AUTHORITY
BY: _____ Capt. Robert Tarrant or Tom Newell	BY: _____ XXXXXXXXXXXXXXXXXXX
ITS: Project Manager	ITS: XXXXXXXXXX

GREATER DETROIT
RESOURCE RECOVERY AUTHORITY

INTERDEPARTMENTAL COMMUNICATION

Via Facsimile: XXX-XXXX

TO: XXXXXXXXXXXXXXXXX

FROM: XXXXXXXXXXXXXXXXX

DATE: July 16, 1997

RE: STORM DAMAGE: SHREDDED WOOD DELIVERIES

Following is the scheduled delivery location and hours of operations for the storm damage shredded wood debris:

LOCATION	DAY/TIME
Greater Detroit Resource Recovery Facility 5700 Russell and Ferry St. Detroit, Michigan 48211	Monday – Friday 8:00 A.M. – 8:30 P.M.
City Disposal System 1550 E. Harper (Enter from Ferry Street) Detroit, Michigan 48211	Saturday, 6:00 A.M. – 6:00 P.M. Sunday, 7:00 A.M. – 3:00 P.M.

Note: All mixed tree loads are to be delivered to City Disposal Monday thru Sunday.

On Scene Command Considerations / Lessons Learned*

- Initial removal of debris should facilitate the opening of roadways and restoration of utilities. Utility restoration work will be ongoing during the debris removal work. This initial phase is ripe for conflicts and a lack of coordination. It is critically important to coordinate actions with:

  - Utility line clearing personnel;
  - Local officials; and
  - Private contractors.

- It is important to set up a meeting with FEMA, the SEOC Incident Commander, and the State Director (of MSP) to identify the Scope of Work for the debris management operation, based upon identified or anticipated issues and priorities. Specific issues to consider include:

  - Overhanging limbs over right-of-way (ROW);
  - Trees on houses;
  - Trees in backyards;
  - Brush in alleyways;
  - Stumps between curbs and sidewalks (within ROW);
  - Brush and logs – stockpiled areas (DPW yards?);
  - Miscellaneous brush piles; and
  - Stumps in yards.

- Specific priorities to consider include:

  - Getting road surfaces / alleyways opened;
  - Getting trees off houses;
  - General cleanup of yards – front and back;
  - Getting alleyways cleared;
  - Picking up brush at curbs and vacant lots; and
  - Removal of uprooted stumps – in front and back yards.

- On Scene Command checklist of considerations / lessons learned:

  - Establish Incident Command structure and ensure that it includes designated representatives for major contractor(s) involved;
  - Establish clear roles and lines of authority for all participating agencies, contractors, and subcontractors;
  - Identify a contact within each jurisdiction and insist that they have authority to make decisions regarding debris removal and disposal;
  - Designate facility locations and provide contact information early on;
  - Establish communication procedures early on, and require that all contractors, subcontractors, and general foremen have cellular telephones and pagers (with locally-provided services or roaming privileges);
  - Ensure that all contact personnel (government and private sector) are available for extended hours and on the weekends, and have after hours contact numbers for everyone;
  - Establish daily reporting format and times for each contractor / subcontractor general foremen;
  - Establish grid definition of work areas;
  - Clearly define all terms used (e.g., “flush cut all stumps” can mean 1-2 inches above the ground to some, and 18-24 inches to others);
  - Hold weekly meetings with ALL general foremen to review work progress and to address common issues of concern;
  - Consider procedures for multiple passes through an area initially, and then revert to a single, final pass;
  - Establish TDSR Sites early on;
  - Establish site cleanup and restoration requirements and responsibilities early on (and don’t deviate from the plan);
  - Clearly document (with descriptions, maps, diagrams, photographs and/or video) site conditions before and after usage to minimize potential liability claims;

- Address basic operational concerns (e.g., security for crews / at sites; lodging needs for crews; money exchange, if applicable; obtaining supplies / support / after-hours repairs; dealing with acts of vandalism; handling accidents; etc.);
- Establish procedures for debris contamination issues;
- Establish final inspection procedures and responsibilities BEFORE the cleanup work begins;
- Establish procedures for addressing damage and liability claims for sidewalks, driveways, structures, etc.;
- Use Right-of Entry and Hold Harmless Agreements when working with private property;
- Address public information / public relations issues on a constant basis (e.g., debris sorting / placement by roadside; recycling / reuse opportunities; drop off locations for debris; noise and traffic issues; basic safety issues near work sites; operation of TDSR Sites; call for volunteers; etc.);
- Coordinate with the County Drain Commissioner regarding the maintenance schedule / record for each affected drain (for work eligibility purposes);
- Establish procedures for cleanup along rural roadways (i.e., between the road shoulder and the visible mowing line, or the entire right-of-way boundary);
- Keep detailed lists of all work areas, problems encountered, and time / cost accounting data;
- Use volunteer groups wherever possible to assist in manual labor needs (and arrange for these groups to be directed at work sites by the general foremen);
- Ensure that all involved personnel understand and follow proper safety precautions when in work zones or traveling to and from work zones. Personal safety gear, highway directional signs, and road worthy equipment are required.

*From notes compiled by Tom Newell, State Debris Manager for both Tree Central operations; slightly modified in some cases for operational consistency purposes.

Tree Central in Action, 1997 and 1998

Clockwise, from upper left: C & D debris from 1998 storms; Tom Newell, State Debris Manager for Tree Central, in State Disaster Debris Management Center – 1998; TDSR Site in City of Detroit – 1997; vegetative debris grinding operation in City of Detroit – 1997; preparing tree stumps for grinding in City of Detroit – 1997.

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SAMPLE RIGHT-OF-ENTRY / HOLD HARMLESS AGREEMENT

(From FEMA Handbook 325 – Debris Management Guide; modified slightly based on similar version used in Tree Central)

I / We_____(name / names)_____, the owner(s) of the property commonly identified as _____(street)_____, _____(city / town / county)_____, State of Michigan, do hereby grant and give freely and without coercion, the right of access and entry to said property to the County / City of _____(name)_____, its agencies, contractors, and subcontractors thereof, for the purpose of removing and clearing any or all storm-generated debris of whatever nature from the above described property.

It is fully understood that this permit is not an obligation to perform debris clearance. The undersigned agrees and warrants to hold harmless the City / County of _____(name)_____, State of Michigan, its agencies, contractors and subcontractors, for damage of any type, whatsoever, either to the above described property or persons situated thereon and hereby release, discharge and waive any action, either legal or equitable which might arise out of any activities on the above described property. The property owner (s) will mark any storm damaged sewer lines, water lines and other utility lines located on the described property.

I / We (have ___, have not ___) (will ___, will not ___) receive (received) any compensation for debris removal from any other source including the Small Business Administration (SBA), Natural Resource Conservation Service (NRCS), private insurance, federal Individual Assistance programs, or any other public assistance program. I will report for this property any insurance settlements to me or my family for debris removal that has been performed at government expense. I am fully aware that an individual who fraudulently or willfully misstates any fact in connection with this agreement shall be subject to a fine of not more than $10,000 or imprisoned for not more than one year or both. For the considerations and purposes set forth herein, I hereby set my hand this (date) day of _____(month)_____, 20____.

_____
Witness

_____
Owner

_____
Owner

_____
Telephone

_____
_____
_____
Address

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FEDERAL DEBRIS MANAGEMENT RESOURCES

FEMA Online Debris Contractor Registry:

United States
Private & Public Partnership

National Threat Advisory:

ELEVATED

Significant Risk of Terrorist Attacks

NERR LINKS

- Update Your Record
- Add a New Resource

OTHER LINKS

- Department of Homeland Security
- FEMA

DISCLAIMER

This registry tool was developed to assist State and local governments in identifying and contacting debris removal contractor resources. The information herein is provided and maintained by contractors and their representatives. FEMA does not verify and takes no responsibility for the accuracy of any information

Returning Contractor?
Please take a moment to log into the NERR.

Are you a new Contractor?
Create a new Account.

If you need help, please contact the help desk at:
(703) 674-3003
USP3-support@mantech-ist.com

Sponsored by
U.S. Department of Homeland Security

Welcome to the National Emergency Resource Registry (NERR). NERR is a feature of DHS' United States Public & Private Partnership (US P3). US P3 is an unclassified network, which immediately provides the Department's Homeland Security Operations Center with one-stop 24/7 access to a broad spectrum of industries, agencies and critical infrastructure across both the public and private sectors.

This first phase of the NERR is being rolled out to support the Federal Emergency Management Agency's initiative to develop a debris removal contractor registry. This initial version of the registry is intended to capture basic information about debris removal contractors and their resource capabilities. The NERR provides a central location where this information will be used by Tribal, State, and local governmental entities to identify and contact contractor resources to solicit bids and proposals for debris removal operations. Please note that this site does not register your company to do business with the federal government and will not be used by the federal government for contracting purposes. In addition, the federal government does not maintain or verify any of the information in this registry. Therefore, contractors should revisit the site periodically to verify

in this database.

FEMA does not endorse, approve or recommend any contractors. State and local governments should perform all appropriate due diligence prior to entering into a contract. Contracting with any of the entities in this database DOES NOT assure a State or local government of reimbursement under a federal grant. State and local governments should follow their own competitive procurement procedures when selecting a contractor.

and update their company information. The information that you enter can only be viewed and changed through a username and password that you designate. Tribal, State, and local governmental entities will be able to view your company information in a version to be released on June 30, 2006.

- US P3 significantly increases the Department's exchange of unclassified information to critical infrastructure owners and operators and the private sector.
- US P3 is locally-governed and administered by knowledgeable, respected domain experts and decision makers from both the private and public sector with the support of Federal Regional Coordinators.
- US P3 provides a tangible tool to engage the community in Homeland Security by supporting locally-relevant information sharing with a direct pipeline to and from the Department.
- US P3 delivers information sharing, alert notification services to the right people - those that need to know, and those that need to act.
- Debris removal contractors can register their company information here.

This contractor registry can be accessed at the following address: https://asd.fema.gov/inter/nerr/home.htm. It can also be found by navigating through the FEMA web site. Go to www.fema.gov, click on the “Business” customer gateway, go to “Contractors and Vendors” and then to “Information for Contractors and Vendors.” The debris contractor registry is under “Debris Management Contractors.” It is a secure site that has search capabilities by organization name, city, state, resource type, and availability status.

U.S. Army Corps of Engineers Emergency Response Portal – Debris Management:

The U.S. Army Corps of Engineer's Emergency Response Portal provides a wealth of debris management technical information, sample contracts, sample plans and planning guidance, and other tools to aid state, local, and tribal officials in their debris management planning and operational activities. The Portal can be accessed at: https://eportal.usace.army.mil/sites/ENGLink. From the subject menu, click on "Debris Management" and then "Technical Assistance Planning Guide for Local Government." There will be a menu that lists the various guidance documents and tools available for viewing and downloading. These additional resources can be used to supplement the basic guidance provided in this Handbook. (Note: when the "Enter Network Password" box appears at various times on the screen, simply click on the "Cancel" button to bypass the registration system. It is not required to access or use the site.) At the time of this writing, the "Technical Assistance Planning Guide for Local Governments" contained the following guidance documents and tools (shown in the order they appear on the USACE menu):

Guidance Document / Tool Link	Title
link 1 – fema policy RP9523.9	FEMA Policy RP9523.9
link 10 – typical household hazardous waste and hazardous toxic waste temporary storage area plan	Typical Household Hazardous Waste and Hazardous Toxic Waste Temporary Storage Area Plan
link 12 – sample scope of work for monitoring	Sample Scope of Work for Monitoring
link 13 – load ticket example	Load Ticket Example
link 14 – automated debris management systems specifications	Automated Debris Management Systems Specifications
link 2 – sample state debris plan	Sample State Debris Plan
link 3 – sample pre event contract for disaster debris removal reduction and disposal	Sample Pre Event Contract for Disaster Debris Removal Reduction and Disposal
link 4 – debris modeling estimating debris quantities	Debris Modeling Estimating Debris Quantities
link 5 – va beach va debris management plan strategy – notepad	VA Beach VA Debris Management Plan Strategy
link 6 – post strike estimating tools	Post Strike Estimating Tools
link 7 – air curtain incinerator detail	Air Curtain Incinerator Detail
link 8 – estimating debris volume	Estimating Debris Volume
link 9 – debris modeling reduction site requirements	Debris Modeling Reduction Site Requirements
resource a – sample contract hurricane	Sample Contract Hurricane
resource b – sample contract for tornadoes	Sample Contract for Tornadoes
resource c – web debris scope of work	Wet Debris Scope of Work
resource d – debris reduction sample contract	Debris Reduction Sample Contract
resource e – sample scope of work for monitoring	Sample Scope of Work for Monitoring
resource f – debris mission guide jun 06	Debris Mission Guide Jun 06
resource g – debris sop	Debris SOP
resource h – automated debris management systems specifications	Automated Debris Management Systems Specifications
ta debris outline revised 14 nov	Disaster Debris Removal / Reduction / Disposal Technical Assistance Planning Guide
link 11 – typical TDSR reduction site layout	Typical TDSR Reduction Site Layout

DEBRIS REMOVAL OPERATIONS
(FEMA DISASTER ASSISTANCE STRATEGY 2007-2 – JUNE 1, 2007)

Source: FEMA web site (edited to fit plan format)

TITLE: Debris Removal Operations

DATE: June 1, 2007

PURPOSE: To establish a strategic framework for providing debris removal assistance in support of a Presidentially-declared emergency or major disaster.

SCOPE AND AUDIENCE: This Strategy applies to emergencies and major disasters declared on or after the date of publication, above, and until superseded. It is applicable to all states eligible to receive assistance under sections 403 and 407 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (hereafter, the Stafford Act), 42 U.S.C. 5121-5206; all Federal agencies that may be directed by FEMA to provide such assistance; and all signatories to the National Response Plan.

AUTHORITY: Sections 403 (Essential Assistance) and 407 (Debris Removal) of the Stafford Act, 42 U.S.C. 5121-5206, and implementing regulations at 44 CFR Part 206.

DEFINITIONS / DESCRIPTIONS:

A. Eligible <u>Public</u> Debris: Disaster-related vegetative materials, construction and demolition materials, household goods, and other materials deposited (either by the event or a property owner) on *public* property (including public rights-of-way), and which present an immediate health and safety threat to the general public.

B. Eligible <u>Private</u> Debris: Disaster-related vegetative materials, construction and demolition materials, household goods, and other materials deposited (by the event) on *private* (personal or commercial) property, and which present an immediate health and safety threat to the general public. ***Debris on private property does not typically present an immediate health and safety threat to the general public, so removal is normally not eligible for reimbursement.*** However, the Federal Coordinating Officer (FCO) is authorized to approve the removal of debris from private property when he/she determines that such debris does present an immediate health and safety threat to the general public, and such removal would be in the public interest. Debris removal from the roads and streets of a gated community will generally be in the public interest when the work is completed by an eligible PA applicant.

C. Direct Federal Assistance (DFA): Within the framework of this Strategy, DFA is debris removal assistance provided by the U.S. Army Corps of Engineers (USACE) or other Federal agencies.

D. Other Federal Agencies (OFA): Within the framework of this Strategy, OFA refers to other (than FEMA) Federal organizations invested with varying authorities for debris management activities. They include the USACE, Environmental Protection Agency, U.S. Coast Guard, and Departments of Agriculture, Commerce, and Transportation.

E. Debris Removal Contractor Registry: A web-based database that reflects information about and the material and operational capabilities of debris removal contractors, including their organic assets. This registry was developed and fielded as a tool to assist local governments advance plan for, and establish the institutional capability to immediately and effectively manage, debris removal operations.

STRATEGY:

A. OVERVIEW

1. State and local governments have principal responsibility for coordinating and managing debris removal operations, with eligible costs reimbursable under the Public Assistance program.

2. If a State and/or local government lacks the capability to initiate, coordinate and manage debris removal operations following a major disaster, FEMA can provide DFA through a mission assignment to another Federal agency (normally the USACE) upon request, when it has been demonstrated that the State and/or local government lack the capability to perform or contract for the requested work.

   a. ***The duration of DFA mission assignments for debris removal will be limited to 60 days from the disaster declaration date.*** The FCO may approve extensions for up to an additional 60 days, if a State or local government has demonstrated it lacks the capability to assume oversight of the debris removal mission. Additional extensions will require approval of the Assistant Administrator of the Disaster Assistance Directorate at FEMA Headquarters.

b. Cost-Share. The non-federal cost-share for debris removal costs (applied equally to both State/local-managed and DFA missions) will be as directed by the President.

(1) If the President has authorized 100% Federal funding for emergency work under sections 403 or 407 of the Stafford Act, the 100% Federal funding is based on actual debris clearance and/or removal work accomplished, either by DFA or by grant assistance, during the designated period. Federal funding for DFA is not based on when a task order was initiated. This work includes whatever clearance, pick up, hauling, processing and disposal activities FEMA authorizes.

(2) For work accomplished after the designated period either by DFA or by grant assistance, the Federal cost-share is at the prevailing rate for the particular disaster. In events where DFA is authorized, the State shall agree in advance to reimburse FEMA for the appropriate non-Federal cost-share of the work including the overhead of the Federal agency assigned the task of debris removal.

3. PA Pilot Program. As directed by the Department of Homeland Security (DHS) Appropriations Act, 2007, Public Law 109-295, FEMA will be conducting a Public Assistance Pilot Program, beginning June 1, 2007, until December 31, 2008. The legislation sets forth three goals: reducing the costs to the Federal Government of providing assistance to state and local governments; increasing flexibility in grant administration; and expediting the provision of assistance to States and local governments. Participation in the PA Pilot Program is open to all state and local governments, and federally-recognized Indian Tribes, that elect to participate in a particular project. This Program currently offers four distinct pilot opportunities, as follows:

a. The provision of grants on the basis of estimates for large projects up to $500,000.

b. The provision of an additional five-percent Federal costs share, not to exceed 100%, to applicants with a FEMA-approved debris management plan, and at least two pre-qualified debris and wreckage removal contractors identified prior to a disaster.

c. The retention of any revenue from the salvage value of recyclable disaster debris, as an incentive to recycle debris.

d. Reimbursement of the straight- or regular-time salaries and benefits of an applicant's permanently employed staff performing eligible debris-related activities.

B. PRE-EVENT PREPARATION AND PLANNING

1. **State and Local**

a. State and local governments are encouraged to plan for - and expected to manage - their own debris removal operations following an emergency or major disaster. DFA, in the form of USACE support, is designed *only* to address situations where the level of debris is catastrophic in scale, or where the capabilities of the State and/or local government to effectively manage such operations are overwhelmed.

b. State and local governments are encouraged and expected to pre-qualify local or regional debris removal contractors, to assure the immediate availability of coordinated debris removal support following a debris-producing incident. To assist state and local governments identify available debris removal contractors, FEMA maintains a State/Local-accessible web-based Debris Removal Contractor Registry.

2. **Federal.** As the Emergency Support Function (ESF) 3 Coordinator and primary Federal provider of DFA in support of debris removal, the USACE:

a. Maintains seven Debris Removal Planning and Response Teams (PRTs). Each PRT is pre-rostered and fully trained, and ready to deploy within 6 hours to begin operationally planning a DFA mission.

b. Maintains advance debris removal contracts, to ensure immediate availability of support.

c. Will, 96 hours prior to projected hurricane landfall, commence development of a tailored, operational debris removal plan.

C. PRE-LANDFALL. Upon a Presidential declaration of a pre-landfall *Emergency* (including designation of Category A – Debris Removal and Direct Federal Assistance), FEMA and/or the USACE will, *if warranted:*

1. Activate, if not previously accomplished, Emergency Support Function (ESF) 3 (Public Works and Engineering).

2. Deploy, if not previously accomplished, a team of debris experts to the FEMA Regional Response Coordination Center (RRCC) to initiate coordination and planning with the State.

3. Deploy (with State consent), debris experts to the State Emergency Operations Center to provide technical assistance and planning support on debris-related issues.

4. Begin, if not previously initiated, assessing the capabilities of threatened state and local governments to effectively coordinate and manage debris removal operations, as well as identify those prospectively requiring DFA.

5. Deploy Debris Planning and Response Teams to affected States.

6. Initiate USACE's debris modeling to estimate the volume of debris that may be expected given the pre-landfall predictions.

7. Commence development of a tailored, operational debris management plan.

8. As appropriate, activate ESF-3 Support Agencies and Advance Contract Initiative contractor(s) to coordinate and assist in debris management planning.

D. POST-LANDFALL. Upon a Presidential declaration of a post-landfall *Emergency* or *Major Disaster* (including designation of Category A – Debris Removal and Direct Federal Assistance), FEMA and/or the USACE will, if *warranted:*

1. Activate, if not previously accomplished, ESF-3.

2. Deploy, if not previously accomplished, a team of debris experts to the RRCC to initiate coordination and planning with the State.

3. Deploy, if not previously accomplished (and with State consent) debris experts to the State Emergency Operations Center to provide technical assistance and planning support on debris-related issues.

4. Assess the capabilities of affected State and local governments to effectively coordinate and manage debris removal operations, and identify those requiring DFA.

5. Deploy, if not previously accomplished, Debris Planning and Response Teams to affected States.

6. Refine debris model results and participate in Rapid Needs Assessment process to define possible requirements for assistance.

7. Work with State agencies to establish an intergovernmental Debris Management Team, as appropriate, to integrate and coordinate debris operations under all authorities and to further develop the operational debris management plan. ESF-3 Support Agencies and Advance Contract Initiative contractor(s) will be activated as appropriate to assist with planning and management efforts.

8. As required, provide Technical Assistance to State/local agencies developing their own debris management capabilities and contracts.

9. Commence debris removal operations under DFA, when State and local governments lack the coordination and management capability, and following request, approval, and mission-assignment.

RESPONSIBLE OFFICE: Disaster Assistance Directorate (Public Assistance Division)

SUPERSESSION: This Strategy replaces and superseded FEMA Recovery Strategy RS-2006-2, *Debris Removal Operations,* dated July 24, 2006.

REVIEW DATE: One year from the date of publication.

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David Garratt
Acting Assistant Administrator
Disaster Assistance Directorate

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FACT SHEET: DEBRIS REMOVAL – AUTHORITIES OF FEDERAL AGENCIES (FEMA FACT SHEET 9580.202 – JANUARY 27, 2007)

Source: FEMA web site (edited to fit plan format)

OVERVIEW: This fact sheet identifies and describes the authorities of federal departments and agencies in support of debris operations following a presidential emergency or major disaster declaration. The following nine Federal agencies and departments are invested with authorities (described in detail below) addressing various aspects of debris management.

Department of Homeland Security:
- *Federal Emergency Management Agency*
- *United States Coast Guard*

Department of Defense: *U.S. Army Corps of Engineers*
Department of Agriculture:
- *Natural Resources and Conservation Service*
- *Farm Service Agency*
- *Animal Plant and Health Inspection Service*

Environmental Protection Agency
Department of Transportation: *Federal Highway Administration*
Department of Commerce: *National Oceanic and Atmospheric Administration*

Department of Homeland Security: *Federal Emergency Management Agency (FEMA)*

- FEMA is authorized in Sections 403, 407 and 502 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to provide assistance to eligible applicants to remove debris from public and private property following a Presidential disaster declaration, when in the public interest.
- Removal must be necessary to eliminate immediate threats to lives, public health and safety; eliminate immediate threats of significant damage to improved public or private property; or ensure the economic recovery of the affected community to the benefit of the community-at-large. The debris must be the direct result of the disaster and located in the disaster area, and the applicant must have the legal responsibility to remove the debris.
- FEMA will (1) reimburse applicants to remove eligible debris, or (2) through a mission assignment to another Federal agency (and upon request of the State) – provide direct Federal assistance when it has been demonstrated that the State and local government lack the capability to perform or contract for the requested work.
- Assistance will be cost-shared (at no less than 75% Federal and 25% non-Federal). In extreme circumstances, FEMA will provide up to 100% funding for a limited period of time.

Department of Homeland Security: *United States Coast Guard (USCG)*

- Under the National Contingency Plan (NCP), the USCG and Environmental Protection Agency (EPA) are responsible for providing pre-designated Federal On-Scene Coordinators (FOSCs) to conduct emergency removals of oil and hazardous materials.
- USCG is responsible for the coastal zone, and the EPA is responsible for the inland zone. The delineation between coastal and inland zones is by mutual agreement between the USCG and the EPA, and the geographic limits are indicated in Area Contingency Plans.
- Under the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA (also known as Superfund), and the Clean Water Act, USCG has the authority to respond to actual or potential discharges of oil and actual or potential releases of hazardous substances, pollutants and contaminants that may endanger public health or the environment.
- Response actions may include containment, stabilization, decontamination, collection (e.g., orphan tanks and drums), and final disposal. Debris may be mixed with, or contain, oil or hazardous materials that are subject to USCG response authorities. Oil removal is funded from the Oil Spill Liability Trust Fund, while hazardous materials removal is conducted using CERCLA funds.
- USCG, under the Ports and Waterways Safety Act (33 U.S.C. §§1221), is responsible for keeping waterways safe and open. While there is no specific language stating that the USCG is responsible for

debris removal from waterways, the USCG has been tasked - in the past - to assist in waterway and marine transportation system recovery.

Department of Defense: *United States Army Corps of Engineers (USACE)*

- USACE is authorized by Section 202 of Water Resources Development Act (WRDA) of 1976 (PL 94-587) to develop projects for the collection and removal of drift and debris from publicly maintained commercial harbors, and from land and water areas immediately adjacent thereto.
- Specific and limited local programs for continuing debris collection and disposal have been authorized (on an individual basis, with the authorized work carried out at each locality as a separate, distinct project) by Congress for:
    - New York Harbor
    - Baltimore Harbor
    - Norfolk Harbor
    - Potomac and Anacostia Rivers, in the Washington, D.C. Metropolitan area
    - San Francisco Harbor/Bay, California.
- Sections 15, 19, and 20 of the River and Harbor Act of 1899, as amended, authorize USACE to remove sunken vessels or other obstructions from navigable waterways under emergency conditions. A navigable waterway is one that has been authorized by Congress, and which USACE operates and maintains for general (including commercial and recreational) navigation. Funding for operation and maintenance of these Federal waterways is through USACE's annual Operations and Maintenance General Appropriation. USACE's policy is to oversee removal of sunken vessels by an identifiable owner, operator or lessee if the sunken vessel is in or likely to be moved into a Federal navigation channel. USACE will remove a vessel using its emergency authorities only if the owner, operator, or lessee cannot be identified or they cannot effect removal in a timely and safe manner.
- USACE is also authorized, under Flood Control and Coastal Emergencies (PL 84-99), to provide assistance for debris removal from flood control works, i.e., structures designed and constructed to have appreciable and dependable effects in preventing damage by irregular and unusual rises in water level. Under this authority, USACE requires that an applicant to be eligible for assistance be an active participant in its PL 84-99 Rehabilitation and Inspection Program at the time of the disaster.

United States Department of Agriculture: *Natural Resources Conservation Service (NRCS)*

- NRCS' Emergency Watershed Protection Program (EWP) is authorized by Section 216 of the Flood Control Act of 1950, PL 81–516, 33 U.S.C. 701b–1; and Section 403 of the Agricultural Credit Act of 1978, PL 95–334, as amended by Section 382, of the Federal Agriculture Improvement and Reform Act of 1996, PL 104–127, 16 U.S.C. 2203.
- Debris clean up must be for either runoff retardation or soil erosion prevention that is causing a sudden impairment in the watershed creating an imminent threat to life or property. Typically, this includes debris within channels but could also include debris in close proximity to a channel or situated where the next event could create an imminent threat to life or property. There is no size limit to the watershed except that EWP assistance is not eligible for coastal erosion restoration.
- The EWP is funded through specific Congressional appropriations.
- Public and private landowners are eligible for assistance but must be represented by a project sponsor (a state or political subdivision thereof, qualified Indian tribe or tribal organization, or unit of local government).
- Work can be done either through Federal or local contracts. Sponsors are responsible for the 75% local cost share.
- NRCS can provide assistance when the President declares an area to be a major disaster area or when an NRCS State Conservationist determines that a watershed impairment exists.
- NRCS will not provide funding for activities undertaken by a sponsor prior to the signing of an agreement between NRCS and the sponsor.

United States Department of Agriculture: *Farm Service Agency (FSA)*

- Emergency Conservation Program (ECP) is authorized by Sections 401 - 406 of the Agricultural Credit Act of 1978, PL 95–334, and provides emergency assistance for debris removal from privately-owned land following a natural disaster. It is funded through Congressional supplemental appropriations.
- The damage must be so costly that Federal assistance is or will be required to return the land to productive agricultural use or to provide emergency water for livestock.

- The ECP provides emergency cost share funding (up to 75% Federal share) and technical assistance for farmers and ranchers to remove debris (other than animal carcasses).

United States Department of Agriculture: *Animal, Plant and Health Inspection Service (APHIS)*

- APHIS has two programs under which it can provide debris removal assistance:
    - Veterinary Services (VS) program authorized by Animal Health Protection Act (7 U.S.C. 8301–8317) which provides for removal and burial of diseased animal carcasses.
    - Plant Protection and Quarantine (PPQ) program authorized by Plant Protection Act (Title IV, PL 106–224, 114 Stat. 438, 7 U.S.C. 7701–7772). This program manages issues related to the health of plant resources. Primary objective is to regulate and monitor in order to reduce the risk of introduction and spread of invasive species, including planning, surveillance, quick detection, containment, and eradication.
- Both public and private lands are eligible under these programs which provide assistance to Federal, State, tribes, local jurisdictions, and private landowners to manage animal and plant health by collecting and providing information, conducting or supporting treatments, providing technical assistance for planning and program implementation (removal).

Environmental Protection Agency (EPA)

- EPA's primary authorities related to debris removal fall into two categories: (1) authorities related to cleaning up debris that is mixed with or contains oil or hazardous materials; and (2) authorities related to establishing standards for proper management of debris (hazardous and non-hazardous). EPA generally does not remove non-hazardous debris after emergencies/disasters.
- Under the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA (also known as Superfund), and the Clean Water Act, EPA and the United States Coast Guard (USCG) have the authority to respond to actual or potential discharges of oil and actual or potential discharges of hazardous substances, and to actual or potential discharges of pollutants and contaminants that may present an imminent and substantial danger to the public health or welfare.
- EPA has responsibility for responses in the inland zone and USCG has responsibility for responses in the coastal zone. The delineation between the inland and coastal zone is determined by mutual agreement by the EPA and USCG, and the geographic boundaries are indicated in Area Contingency Plans.
- EPA and USCG carry out these responsibilities under implementing regulations known as the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). EPA and USCG pre-designate Federal On-Scene Coordinators (FOSCs) to direct and coordinate response actions.
- Response actions may include containment, stabilization, decontamination, collection (e.g., orphan tanks and drums), and disposal. Debris may be mixed with, or contain, oil or hazardous materials that are subject to these response authorities.
- CERCLA requires that the State in which the site is located fund 10% of remedial action costs, with the other 90% drawn from the Superfund. However, where the potentially responsible party is a political subdivision of a State, the State must agree to fund 50% of the remedial action costs, with the other 50% drawn from the Superfund.
- The Resource Conservation and Recovery Act established a framework for Federal, State, and local cooperation in controlling the management of hazardous and non-hazardous solid waste. The EPA role is to establish minimum regulatory standards that are, in most cases, implemented by the States and to provide technical assistance. EPA administers other laws as well that may impact the management of debris (e.g., Clean Air Act requirements that apply to asbestos-containing debris). Again, some of these programs may be delegated to the States.
- FEMA may mission assign the EPA through the United States Army Corps of Engineers to dispose of household hazardous waste following a major disaster declaration from the President.

Department of Transportation: *Federal Highway Administration (FHWA)*

- The Emergency Relief (or ER) program is authorized in Title 23, United States Code, Section 125, from the Highway Trust Fund, and supports repair or reconstruction of Federal-aid highways and roads on Federal lands which have suffered serious damage as a result of natural disasters or catastrophic failures from an external cause.
- Debris removal from Federal-aid roads is eligible for 100% reimbursement during the first 180 days following an emergency event that qualifies and is approved for the ER program.

- The ER program is funded $100 million in annual authorizations. If the annual authorization is expended, FHWA will reimburse eligible costs when ER funds become available.
- The State must incur a cost of at least $700,000 statewide to qualify for ER assistance. The cost of individual projects (sites) must be $5,000.
- It is the responsibility of individual States to request ER funds for assistance in the cost of necessary repair of Federal-aid highways damaged by natural disasters or catastrophic failures.

Department of Commerce: *National Oceanic and Atmospheric Administration (NOAA)*

- The Coastal and Geodetic Survey Act of 1947 and the Hydrographic Services Improvement Acts of 1998, 2002, authorize NOAA to be directly involved in programs to assess and remove hazards and debris. NOAA does not fund debris removal.
- NOAA's Office of Coastal Survey is responsible for surveying and charting the nation's waters and coast, and has been heavily involved in hydro-surveying using side-scan and multi-beam sonar to identify hazards and debris and dangers to navigation along the Gulf Coast for the last three years.

/Signed/ 1/27/2007
David Garratt Date
Acting Director of Recovery

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COMMODITIES INVENTORYING / TRACKING FORM (HARDCOPY)

Instructions: This form – a modified version of the E Team "Critical Asset" Report – can be used as appropriate by Staging Areas and the Base / Camps to inventory and track the receipt and distribution of commodities (debris management resources) if access to E Team is not available. (Note: At the time of this writing, the E Team "Critical Asset" Report was not completely compatible with the resource typing under the NIMS; therefore, it reflects some but not all of the NIMS-compliant lexicon related to commodity category, kind and type. Also, in an effort to save space some of the commodities on this hardcopy form have been consolidated and others have been left off altogether. Commodities not listed can simply be written in by hand and then entered into E Team at a later time.)

Date / Time:	
Authorizing Staff Person:	
COMMODITY FROM:	
Name of Contract Person:	
Organization (if applicable):	
Mailing Address:	
City / State / Zip Code:	
Telephone (work / home):	
Facsimile:	
E-Mail Address (work / home):	

COMMODITY:

(Category / Description / Kind / Type)	Quantity	Unit of Measure*	Value of Commodity ($)	# Distributed	# Remaining
(Critical Life Sustaining Commodities)					
Food					
Drinking Water (Bottled / Water Buffalo)					
Ice – Cold					
Medicines / Pharmaceuticals					
Medical Supplies					
Baby Formula / Food					
Diapers					
Tarps / Plastic Sheeting					
Ice – Dry					
Cleaning Supplies					
Cots					
Bedding / Blankets					
Personal Care Kits					
Towels					
Clothing					
Flashlights / Batteries					
Other (Specify):					
Other (Specify):					
(Critical Response / Recovery Commodities)					
Air Transportation – Airplane					
All Terrain Vehicles (ATVs)					
(AP = Animal Protection Resources)					
AP: Incident Management Team (Types I-III)					
AP: Large Animal Rescue Strike Team					
AP: Large Animal Sheltering Team (Types I-III)					
AP: Large Animal Transport Team					
AP: Small Animal Rescue Strike Team					
AP: Small Animal Sheltering Team (Types I-III)					
AP: Small Animal Transport Team					
Armored Vehicle					
Boat					
Bomb Team / Dog / Technician					
Bulldozer (Heavy / Medium / Light)					
Bus					
Cadaver Bag					
Cargo Truck					
Communications (Specify:)					
Decontamination (Specify:)					
Dosimeter Kit					
Dumpster					
(EMS = Emergency Medical Services Resources)					
EMS: Air Ambulance, Rotary / Fixed (Types I-IV)					
EMS: Ambulance, Ground (Types I-IV)					
(F&H = Firefighting and Hazardous Materials)					
F&H: Brush Patrol – Firefighting (Type IV)					
F&H: Crew Transport (Types I-III)					
F&H: Engine, Fire – Pumper (Types I-VII)					
F&H: Fire Boat (Types I-III)					
F&H: Fire Truck, Aerial (Types I and II)					
F&H: Foam Tender (Types I and II)					
F&H: Fuel Tender (Types I and II)					
F&H: HazMat Entry Team (Types I-IV)					
F&H: Helicopters – Firefighting (Types I-IV)					
F&H: Helitanker – Firefighting Helicopter					

***Unit of Measure:** bottles; boxes; cases; each; gallons; pallets; units. Use only one unit of measure for each commodity. **(FORM CONTINUED ON NEXT PAGE)**

COMMODITIES INVENTORYING / TRACKING FORM (HARDCOPY) – PAGE 2

(Category / Description / Kind / Type)	Quantity	Unit of Measure*	Value of Commodity ($)**	# Distributed	# Remaining
(F&H = Firefighting / Hazardous Materials)–cont.					
F&H: Inc Mgmt Team – Firefighting (Types I-IV)					
F&H: Portable Pump (Types I-III)					
F&H: Water Tender – Firefighting (Types I-IV)					
F&H: HazMat Protective Suit (Specify Level:)					
Fax Machine					
Forklift (Specify:)					
(H&M = Health and Medical Resources)					
H&M: DMAT (Specify Specialty:)					
H&M: DMORT					
H&M: IMSuRT (Types I and II)					
H&M: VMAT (Types I and II)					
Heavy Equip Transport (Heavy / Med / Light)					
HEPA Unit – Portable					
Illumination Unit (Types I and II)					
(IM = Incident Management Resources)					
IM: Airborne Transport Team (Types I-IV)					
IM: Comm. Support Team – CAP (Types I-IV)					
IM: CIS Mgmt Team (Types I-III)					
IM: Donations Coordinator / Team (Types I-IV)					
IM: EMAC Advance Team (Types I-III)					
IM: EOC Staff (Specify:)					
IM: Evacuation Coord. Team (Types I-III)					
IM: Incident Mgmt Team (Types I-IV)					
IM: IA Disaster Assmt. Team / Leader					
IM: Mobile Comm. Center (Types I-IV)					
IM: Mobile Feeding Kitchen (Types I-IV)					
IM: Public Assistance Coordinator (Types I-IV)					
IM: Rapid Needs Assessment Team (Type I)					
IM: Shelter Management Team (Types I-IV)					
IM: Voluntary Agency Liaison (Types I-IV)					
IT Support					
Language Interpreter					
(LE&S = Law Enforcement / Security Resources)					
LE&S: Bomb Squad / Explosives Team (Types I-III)					
LE&S: LE Aviation Helicopters (Types I-IV)					
LE&S: LE Obser. Aircraft – Fixed (Types I and II)					
LE&S: Mobile Field Force (Types I-III)					
LE&S: Public Safety Dive Team (Types I-IV)					
LE&S: SWAT / Tactical Teams (Types I-III)					
Mobile Command Post					
Patrol Vehicle					
Blood / Plasma					
Port-O-Johns (Portable Toilets)					
(PW = Public Works Resources)					
PW : Air Conditioner / Heater (Types I-IV)					
PW: Air Curtain Burners (Types I-VI)					
PW: All Terrain Crane (Types I-IV)					
PW: Backhoe Loader (Types I-IV)					
PW: Chillers and Air Handlers (Types I-V)					
PW: Concrete Cutter (Types I-IV)					
PW: Crawler Crane (Types I-III)					
PW: Debris Mgmt Team / Monitoring Team					
PW: Disaster Assessment Team / Recovery Team					
PW: Dump Truck – Off Road / On-Road					
PW: Flat Bed Trailer Truck (Type I)					
PW: Generator (Types I-V)					
PW: Hydraulic Excavator – Large / Medium Mass					
PW: Hydraulic Truck Cranes (Types I-III)					
PW: Track Dozer / Wheel Dozer					
PW: Tractor Trailer (Types I and II)					
PW: Tub Grinder (Types I-IV)					
PW: Wheel Loader – Large / Medium / Small					
PW: Sandbags					
(S&R = Search and Rescue Resources)					
S&R: Air Search / Reconnaissance Team					
S&R: Canine Search Team (Specify:)					
S&R: Collapse S&R Team (Types I-IV)					
S&R: S&R Team – Flood / Mine / Wilderness					
S&R: US&R Incident Support Team / Task Force					
Snow Plow					
Utility Transport (Types I and II)					
Veterinarian					
Other (Specify):					

***Unit of Measure:** bottles; boxes; cases; each; gallons; pallets; units. Use only one unit of measure for each commodity.

DEPLOYED PERSONNEL REGISTRATION FORM (HARDCOPY OF E TEAM "VOLUNTEER RECORD")

Instructions: This form – a modified version of the E Team "Volunteer Record" Report – can be used by Base / Camp personnel to register persons staying at the Base / Camp for possible later deployment under the disaster debris management operation. This form should be used if access to E Team is not available.

STAFF USE ONLY:

Date / Time:	
Authorizing Staff Person:	

PERSONNEL INFORMATION:

Name (Last, First, MI):	
Gender (Male / Female):	
Job Status (see Note 1):	
Job Title / Rank (see Note 2):	
Mailing Address:	
City / State / Zip Code:	
Phone (work/home/cell/other):	
E-Mail Address:	
Organization / Location:	
Position:	
Agency:	

Note 1 Selections: Advisory Board Member; Employee; Employee (Hourly); Employee (Salary); Officer; Officer (Retired); Volunteer.
Note 2 Selections: Mr.; Mrs.; Ms.; Captain; Envoy; Major; Lt. Colonel; Colonel; Commissioner; Administrative Assistant.

FUNCTION INFORMATION:

Primary Function:	
Supervisor? Y/N:	
Secondary Function:	
Supervisor? Y/N:	

DEPLOYMENT INFORMATION:

Notification Required(see Note 3):	
Availability (see Note 4):	
Team Partner (see Note 5):	

Note 3 Selections: None needed; 8 hours; 16 hours; 24 hours; 48 hours; 72 hours.
Note 4 Selections: Local Disasters (local sites only); In-State Disasters (available for statewide service); National Disasters (available for work outside Michigan if required to support the disaster logistics management operation).
Note 5 Information: Name / Organization & Location / Position / Agency.

TRAINING / SKILLS: (Note: complete as relevant for functions to be performed.)

Salvation Army Training:	
FEMA Training:	
State / Local Govt. Training:	
CISM Training:	
Other Vol. Agency Training:	
Courses Qualified to Instruct:	
Professional Certifications:	
Skills:	
Amateur Radio Call Sign:	
Additional Languages:	
Other Experience:	

EMERGENCY AND MEDICAL INFORMATION:

Health / Medical Issues? (If Yes, Describe)	
Emergency Contact:	
Relationship/Contact Phones:	

VEHICLE QUALIFICATION:

Drivers License # / State:	
Classification:	
Expiration Date:	
Vehicles Qualified to Operate (see Note 6):	

Note 6 Selections: ATV; Boat; Bus; Camper/RV; Canteen (Mobile Kitchen); Car; Fork Lift; Mini Van (less than 15 passengers); Maxi Van (15+ passengers); Trailer, Towed; Truck, Box; Truck, Tractor Trailer.

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PRE-IDENTIFIED DEBRIS MANAGEMENT FACILITIES – BY MSP/EMHSD DISTRICT

The following public / private nonprofit facilities have been pre-identified in each MSP/EMHSD District for POSSIBLE use during a logistics management operation subsequent to a large-scale / catastrophic incident that requires the procurement and distribution of supplemental commodities to sustain the affected population and/or to aid in the response and recovery effort. These same facilities could also be used to support disaster debris management operations. The incident circumstances will determine, to a large degree, the specifics of the disaster debris management operation. Because of the time constraints that would be involved within the SEOC for making critical decisions related to the debris management operation, it is important that as many details as possible be pre-addressed in this plan. To that end, the public facility listings that follow are intended to provide a STARTING POINT for making rapid, informed decisions regarding the establishment of state and local facilities required to support and sustain a large-scale disaster debris management operation. Many incident and situation-specific factors will ultimately be considered before final facility selections are made. In some cases, it may be determined that these (or other) public / private nonprofit facilities are not appropriate for use; rather, privately owned / operated (commercial) facilities may be considered instead. In those situations, the Michigan Department of Management and Budget will aid the SEOC staff in locating and procuring the private space required to handle the needs of the specific debris management function.

STAGING AREAS:

Selection Considerations: Staging Areas can be any available, large outdoor area (ideally 1-25 acres in size, with fencing or other security provisions) with sufficient area to temporarily park vehicles, equipment, personnel and goods that are ready for deployment to the affected area to aid in disaster response and recovery operations. (Vehicles and equipment might include dump trucks, front-end loaders, bulldozers, buses, cargo trucks, etc.) Staging Areas should have adequate parking spaces for a large number of workers at any time, and (ideally) covered space (e.g., permanent building, tent) to shelter workers and goods from the weather and provide a measure of security. Staging Areas should also have provisions in place for temporarily lodging, feeding, and caring for workers (that are ready for deployment) and for addressing their basic sanitation concerns (i.e., port-a-johns, portable showers, and hand washing facilities). Either a permanent building, tent space on the grounds, or a combination of both may meet the temporary lodging requirements. (An alternative is to provide shuttle service for workers to and from local motels and hotels, or a nearby Base / Camp set up to provide for the lodging, food, water, and sanitation needs of personnel.) Possible locations for use as Staging Areas include vacant commercial lots, nongovernmental organization warehouse facilities, governmental warehouse facilities, armories, county fairgrounds, highway / public works maintenance garages, airports, parks and recreation areas, or possibly shopping center parking lots (providing there is expressed written permission from the owner).

District	Facility Name	Facility Address	Facility Type	Geo-Location (Lat/Long)		Comments / Considerations
1	MDOT – General Services Building	7461 Crowner Dr., Lansing	Warehouse	42.683667	-84.641817	Part of State Secondary Complex
1	Livingston Cty. Transportation Complex	3950 W. Grand River, Howell	Maintenance Garage	42.579850	-83.882400	Easy access to I-96/M-59, Howell Airport
1	Jackson County Airport	3606 Wildwood, Jackson	Airport	42.281383	-84.394550	
2N	Goodells Park	8345 County Park Dr., Goodells	Park	42.982921	-82.654767	Easy access to I-94 / I-69
2N	St. Clair County Airport	177 Ash Rd., Kimball Twp.	Airport	42.910115	-82.520269	Easy access to I-94 / I-69
2N	Stony Creek Metropark	4300 Main Park Dr., Shelby Twp.	Park	42.711036	-83.201422	
2N	Wolcott Mill Metropark	63841 Wolcott Dr., Ray	Park	42.776267	-83.058953	Easy access to I-75 / M-50
2N	Metro Beach Metropark	31300 Metro Pkwy., Harrison Twp.	Park	42.580217	-83.201422	
2N	Bald Mountain Recreation Area	1330 E. Greenshield Rd., Lake Orion	State Park	42.743688	-83.216861	Has campground / support facilities
2N	Holly Recreation Area	8100 Grange Hall Rd., Holly	State Park	42.830867	-83.526565	Has campground / support facilities
2N	Proud Lake Recreation Area	3500 Wixom Rd., Commerce Twp.	State Park	42.560037	-83.551855	Has campground / support facilities
2S	Wayne County Asset Mgmt. Center	15800 Northline Rd., Southgate	Parking Lot	42.213252	-83.216490	
2S	Metro Airport - Emer. Equip. Storage Area	Eureka Rd. and Wayne Rd.	Parking Lot	42.194191	-83.384372	25 acres; fenced / secured
2S	Michigan National Guard Armory	15483 S. Dixie Hwy., Monroe	Armory	41.904361	-83.407989	Easy access to I-75 / M-50
2S	Michigan National Guard Armory	7400 S. Huron River Dr., Ypsilanti	Armory	42.210733	-83.615431	
2S	Michigan State Fairgrounds	1120 W. State Fair, Detroit	Fairgrounds	42.439000	-83.117000	Used by other agencies for staging
2S	Eastern Market	2334 Russell, Detroit	Farmer's Market	42.344000	-83.039000	Outdoor Farmer's Market
3	Genesee County Fairgrounds	5045 Stanley Rd., Flint	Fairgrounds	43.105900	-83.616004	
3	Bay County Fairgrounds	800 Livingston, Bay City	Fairgrounds	43.596564	-83.854934	
3	Wurtsmith Air Base	Oscoda	Air Base	44.454940	-83.355461	Former air base; owned by City of Oscoda
5	Kalamazoo County Fairgrounds	2900 Lake St., Kalamazoo	Fairgrounds	42.277043	-85.544846	130 acres; 37,571 square ft. under roof
5	Lake Michigan College	2755 Napier, Benton Harbor	College	42.089609	-86.391644	Close proximity to I-94
5	Battle Creek Air National Guard Base	3367 W. Dickman Rd., Battle Creek	Military Base	42.317222	-85.254722	Airport with 10,000-foot runway
6	Isabella County Fairgrounds	500 N. Mission Rd., Mt. Pleasant	Fairgrounds	43.647700	-84.767909	Easy access to US-127 / M-20
6	Mason County Fairgrounds	102 S. Main St., Scottville	Fairgrounds	43.954859	-86.279402	Easy access to US-31 / US-10
6	Kent County Fairgrounds	225 S. Hudson St., Lowell	Fairgrounds	42.931682	-85.342073	Easy access to I-96 / M-50
7	Alpena Combat Readiness Training Ctr.	5884 A Street, Alpena	Military Training Base	45.050000	-83.550000	
7	Emmet County Fairgrounds	1129 Charlevoix Ave., Petoskey	Fairgrounds	45.370060	-84.976055	
7	Ralph A. McMullen Center	104 Conservation Rd., Roscommon	Conference Center	44.514722	-84.749722	State owned conference center
8	Great Lakes Air	180 N. Airport Rd., St. Ignace	Airport	45.890667	-84.737139	
8	Little Bear Arena	275 Marquette St., St. Ignace	Arena / Event Ctr.	45.872417	-84.733694	Multi-purpose arena / event center
8	Marquette County Fairgrounds	County Road 553, Marquette	Fairgrounds	46.490368	-87.413982	

BASE / CAMPS:

Selection Considerations: The Base / Camps are temporary locations within the general incident area which are equipped and staffed to provide food, water, sleeping areas, and sanitation services for workers that are not currently on call for deployment. The Base / Camps are used in those situations where overnight / multi-day accommodations are required for volunteers, equipment operators, and other deployed resources under the disaster debris management operation. The Base / Camps may be utilized, at the discretion of the MSP/EMHSD, in lieu of local hotel / motel or other accommodations. Camps may be particularly suited for certain situations, such as when there is a shortage of nearby hotel / motel rooms or other suitable accommodations for deployed resources, when large numbers of resources have been deployed from outside the incident area (e.g., EMAC resources), or when the incident area is particularly large or widely dispersed. Possible facilities for use as the Base / Camps include county fairgrounds, state / local parks and recreation areas, local campgrounds, military bases, college campuses, school grounds (if tents are used), community centers or community recreation centers, etc. Ideally, using the facility as a Base / Camp will not greatly interfere with its normal, day-to-day use.

District	Facility Name	Facility Address	Facility Type	Geo-Location (Lat/Long)		Comments / Considerations
1	MSP Training Academy	7426 N. Canal Rd., Lansing	Campus	42.675350	-84.660167	Easy access to I-96 / I-69
1	Howell High School	1200 W. Grand River, Howell	School / Campus	42.616017	-83.945317	Easy access to I-96 / M-59
1	Jackson County Fairgrounds	200 W. Ganson, Jackson	Fairgrounds	42.255350	-84.409817	
2N	Goodells Park	8345 County Park Dr., Goodells	Park	42.982921	-82.654767	Easy access to I-94 / I-69
2N	St. Clair County Airport	177 Ash Rd., Kimball Twp.	Airport	42.910115	-82.520269	Easy access to I-94 / I-69
2N	Stony Creek Metropark	4300 Main Park Dr., Shelby Twp.	Park	42.711036	-83.201422	
2N	Wolcott Mill Metropark	63841 Wolcott Dr., Ray	Park	42.776267	-83.058953	Easy access to I-75 / M-50
2N	Metro Beach Metropark	31300 Metro Pkwy., Harrison Twp.	Park	42.580217	-83.201422	
2N	Bald Mountain Recreation Area	1330 E. Greenshield Rd., Lake Orion	State Park	42.743688	-83.216861	Has campground / support facilities
2N	Highland Recreation Area	5200 E. Highland Rd., White Lake	State Park	42.650547	-83.543663	Has campground / support facilities
2N	Oakland Community College	27055 Orchard Lake Rd., Farmington Hills	College	42.493791	-83.358362	Orchard Ridge Campus
2S	Wayne County Community College	Northline Rd., Taylor	College	42.212845	-83.239308	Has classrooms/locker rooms/sleeping areas
2S	Sterling State Park	2800 State Park Rd., Monroe	Park	41.920876	-83.340384	Can serve 1,000+ campers; I-75 access
2S	Saline Farm Council Fairgrounds	5055 Saline Ann Arbor Rd., Saline	Fairgrounds	42.210364	-83.796932	
2S	Wheeler Recreation Center	637 Brewster St., Detroit	Recreation Center	42.347000	-83.046000	Has large parking area
2S	Michigan State Fairgrounds	1120 W. State Fair, Detroit	Fairgrounds	42.439000	-83.117000	Used by other agencies for staging
2S	Eastern Market	2334 Russell, Detroit	Farmer's Market	42.344000	-83.039000	Outdoor Farmer's Market
3	Genesee County Fairgrounds	5045 Stanley Rd., Flint	Fairgrounds	43.105900	-83.616004	
3	Bay County Community Center	800 John F. Kennedy Dr., Bay City	Community Center	43.591711	-83.901147	
3	Wurtsmith Air Base	Oscoda	Air Base	44.454940	-83.355461	Former air base; owned by City of Oscoda
5	Fort Custer Training Center	2501 26th St., Augusta	Military Base	42.308325	-85.446440	Has sleeping quarters, showers, mess hall
5	Berrien County Youth Fair	9122 N. US-31, Berrien Springs	Fairgrounds	41.953403	-86.351650	
5	Lakeview Middle School	300 S. 28th St., Battle Creek	School	42.318280	-85.231684	
6	Central Michigan University	1720 SE Campus Dr., Mt. Pleasant	University	43.586939	-84.769484	US-127 access
6	Westshore Community College	3000 N. Stiles Rd., Scottville	College	43.901398	-86.338475	US-10 access
6	Grand Rapids Community College	227 Fulton St. E., Grand Rapids	College	42.963100	-85.663960	I-196 access
7	Alpena Combat Readiness Training Ctr.	5884 A Street, Alpena	Military Training Base	45.050000	-83.550000	
7	Emmet County Fairgrounds	1129 Charlevoix Ave., Petoskey	Fairgrounds	45.370060	-84.976055	
7	Ralph A. McMullen Center	104 Conservation Rd., Roscommon	Conference Center	44.514722	-84.749722	State owned conference center
8	Gros Cap School (Moran Twp.)	W1828 Cros Cap Rd., St. Ignace	School	45.870278	-84.824000	
8	LaSalle High School	850 Portage St., St. Ignace	School	45.864833	-84.742750	
8	Northern Mich. Univ. Superior Dome	1401 4th St., Marquette	Athletic Facility	46.559185	-87.396190	Domed stadium with artificial turf field

COLLECTION CENTERS / TEMPORARY DEBRIS STORAGE AND REDUCTION SITES

At the time of this writing, a corollary local disaster debris management planning effort was being instituted with an end goal of developing local disaster debris management plans in all Michigan emergency management program jurisdictions. Part of that local debris management planning process involves the identification / selection of Collection Centers and Temporary Debris Storage and Reduction Sites in each program jurisdiction. It is expected that each local debris management plan will have identified at least one, and ideally up to three, TDSR Sites. Once that process is completed, the MSP/EMHSD will compile the geo-locational and descriptive data for each identified site into a table, similar in content to those provided above for Staging Areas and the Base / Camps. Because of the potentially large number of Collection Center sites that are expected to be pre-identified in local disaster debris management plans, and because the use of these sites is situationally-driven by the incident conditions, the MSP/EMHSD does not intend to compile and geo-locate this information.

LANDFILLS AND RESOURCE RECOVERY FACILITIES

Current information pertaining to the locations and operational considerations for landfills and resource recovery facilities will be included in local disaster debris management plans. In addition, each county is required by the MDEQ to have a Solid Waste Management Plan which prescribes how solid waste management activities will be addressed within the county. The MDEQ can provide up-to-date information about landfills and resource recovery facilities through its Waste and Hazardous Materials Division.

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DISTRICT DEBRIS MANAGEMENT FACILITY LOCATIONS

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